United States Department of the Interior
Bureau of Land Management

Montana State Office

December 1990

FINAL
WILDERNESS ENVIRONMENTAL IMPACT STATEMENT
GARNET RESOURCE AREA

The Bureau of Land Management is responsible for the stewardship of our public lands. It is committed to manage, protect, and improve these lands in a manner to serve the needs of the American people for all times. Management is based on the principles of multiple use and sustained yield of our nation's resources within a framework of environmental responsibility and scientific technology. These resources include recreation; rangelands; timber; minerals; watershed; fish and wildlife; wilderness; air; and scenic, scientific, and cultural values.

BLM-MT-ES-91-002-4332

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
MONTANA STATE OFFICE
222 NORTH 32ND STREET
P.O. BOX 36800
BILLINGS, MONTANA 59107-6800

TAKE PRIDE IN AMERICA

IN REPLY TO:

Dear Reader:

The Final Wilderness Environmental Impact Statement for the Garnet Resource Area is presented for your review. This document considers the environmental impacts of nondesignation, total designation and partial designation of three Wilderness Study Areas (WSAs) as part of the National Wilderness Preservation System. The study areas consist of Wales Creek MT-074-151A (11,380 acres), and Quigg West MT-074-155 (520 acres). These areas are administered by the Bureau of Land Management's Garnet Resource Area within the Butte District. The proposed action and reasonable alternatives for each WSA are in Chapter 2; The environmental impacts of each alternative are considered in Chapter 4. This document was prepared largely from information contained in the Garnet Resource Management Plan/Environmental Impact Statement (RMP/EIS). The draft RMP/EIS was issued in December 1984, and received a 90-day public review which ended March 13, 1985. Included in the review was a public hearing on February 13, 1985. The public comments received from the review were incorporated into the final RMP/EIS issued September 28, 1985. No protests were received in the final 30-day review period which ended October 27, 1985.

The recommendations on wilderness suitability contained in this EIS will be forwarded to the Secretary of the Interior and the President for their review and recommendations. Congress will make the final decisions on wilderness designations.

Sincerely,

Robert W. Faithful
Acting State Director

FINAL

WILDERNESS ENVIRONMENTAL IMPACT STATEMENT

For The

GARNET RESOURCE AREA

BUTTE DISTRICT
MONTANA

Prepared By

BUREAU OF LAND MANAGEMENT
DEPARTMENT OF THE INTERIOR

Robert W. Faithful

ACTING STATE DIRECTOR
MONTANA STATE OFFICE

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FINAL

WILDERNESS ENVIRONMENTAL IMPACT STATEMENT
GARNET RESOURCE AREA

ABSTRACT

This Wilderness Environmental Impact Statement considers the suitability of the Wales Creek, Hoodoo Mountain, and Quigg West wilderness study areas, containing 23,480 acres of public lands, for inclusion in the National Wilderness Preservation System.

These areas are located in the Butte District and are managed by the Garnet Resource Area.

This study recommends that Wales Creek and Hoodoo Mountain not be designated wilderness and that multiple use management be implemented as prescribed in the Garnet Resource Management Plan/Environmental Impact Statement. Quigg West is recommended for wilderness designation contingent upon wilderness designation of the adjacent Forest Service Quigg RARE II area.

For further information contact Darrell C. Sall, Area Manager, Garnet Resource Area, Bureau of Land Management, 3255 Fort Missoula Road, Missoula, Montana 59801 or phone (406) 329-3914.

SUMMARY

PURPOSE OF THE EIS

The purpose of this EIS is to aid the analysis and decision making process for the Wales Creek, Hoodoo Mountain, and Quigg West wilderness study areas for inclusion in the National Wilderness Preservation System. The document also analyzes the environmental impacts of designation, partial designation and nondesignation with subsequent management. The EIS is in response to Sections 202 and 603 of the Federal Land Policy and Management Act. Quigg West was studied under the authority of Section 202 which calls for comprehensive land use planning. A recommendation for wilderness designation is reported to Congress through the BLM Director, Secretary of Interior, and the President. Wales Creek and Hoodoo Mountain were studied under the authority of Section 603 which directs the BLM to inventory, study, and report to the Congress, through the Secretary of Interior and the President, the suitability of certain lands for wilderness preservation.

SETTING

The Wales Creek WSA consists of 11,580 acres and is located along the eastern slopes of the Garnet Mountain Range in western Montana, approximately 40 miles east of Missoula.

The Hoodoo Mountain WSA consists of 11,380 acres and is located along the top of the east Garnet Mountain Range in western Montana, approximately 60 miles east of Missoula.

The Quigg West WSA consists of 520 acres adjacent to the 60,050-acre Forest Service Quigg RARE II area. The tract is basically south-facing slopes to the Rock Creek drainage in western Montana, approximately 20 miles west of Philipsburg.

ISSUES

The WSAs were considered in light of issues identified during the wilderness inventory process, the study process, and the development of the Garnet Resource Management Plan. Concerns were expressed through letters, formal and informal public meetings, and other public contacts.

The issue topics considered in the document are: wilderness values, timber management, mineral and energy developments (including oil and gas), wildlife habitat, recreational use and opportunities, economic situation, fire control/management, social attitudes and rights-of-way. The potential benefits and resource conflicts resulting from wilderness designation are discussed in this document.

ALTERNATIVES

Based upon the scoping and planning process, two or three alternatives ranging from no wilderness to all wilderness for the WSAs were considered in the Garnet RMP/EIS and brought forward for analysis in this document. Table S-1 is an acreage summary for each alternative and area.

STUDY RECOMMENDATION

The proposed action is the No Wilderness Alternative for Wales Creek and Hoodoo Mountain WSAs. The alternative proposes that none of the 22,960 acres be designated as wilderness and the areas be managed as described in the Garnet Resource Management Plan/Environmental Impact Statement (1985) and in Chapter 2 of this document. Wilderness designation is proposed for the 520-acre Quigg West WSA with the area to be managed in conjunction with the adjacent FS Quigg RARE II area. If the adjacent FS area is not designated wilderness, the 520 acres will be managed as a Special Management Area as described in Chapter 2 under the No Wilderness Alternative.

Under Section 202 wilderness study, the state director has the authority to remove WSAs from any further wilderness study consideration. Should the FS Quigg RARE II area or Quigg West WSA

not be designated wilderness by Congress and is returned to nonwilderness multiple use, the BLM Quigg West could be removed from any further wilderness consideration by the state director.

MAJOR ENVIRONMENTAL CONSEQUENCES

With the proposed action, there would be little or no environmental impact on forest management, energy and mineral development, water quality, cultural resources, wildlife habitat. The opportunity to recreate in an undeveloped area would be foregone on portions of 16,360 acres. Also the opportunity to add 22,960 acres to the wilderness system would be foregone while forest management activities would reduce the existing naturalness of between 14,000 and 15,000 acres of commercial forest land over the long term.

TABLE S-1
ALTERNATIVES

Area	Altrernative	Acres Recommended Suitable	Acres Recommended Nonsuitable
Wales Creek	No Wilderness (Proposed Action)	0	11,580
	All Wilderness	11,580	0
	Partial Wilderness	4,900	6,680
Hoodoo Mountain	No Wilderness (Proposed Action)	0	11,380
	All Wilderness	11,380	0
	Partial Wilderness	5,873	5,507
Quigg West	No Wilderness	0	520
	All Wilderness (Proposed Action - conditional upon designation of adjacent FS)	520	0

TABLE OF CONTENTS

CHAPTER 1
INTRODUCTION

PURPOSE AND NEED

The purpose of this document is to analyze the effects of implementing the proposed action and all reasonable alternatives for each of the Wilderness Study Area (WSAs). The analysis will aid in designating areas reviewed for wilderness values. The Federal Land Policy and Management Act of 1976 (FLPMA) authorized the Bureau of Land Management (BLM) to review public lands under its administration for wilderness potential. Section 603 of FLPMA mandates the review of roadless areas of five thousand acres or more and roadless islands for wilderness characteristics. Section 202 provides for the review of public lands for wilderness potential through the planning process.

WILDERNESS REVIEW PROCESS

The wilderness review process developed by BLM to identify, evaluate and recommend areas to Congress for consideration for preservation as wilderness consists of three phases:

1. *Inventory* — The inventory phase identifies public lands that possess wilderness characteristics as defined by Congress in the Wilderness Act of 1964. These areas are identified as Wilderness Study Areas.

2. *Study* — The study phase allows for evaluation of wilderness and other values. It is also used to evaluate other values, resources, and uses that occur within the WSAs and to determine which WSAs will be recommended as suitable or nonsuitable for wilderness designation. These evaluations and recommendations are made through the BLM's land use planning system using the criteria listed in Appendix A.

3. *Reporting* — The reporting phase consists of forwarding or reporting the suitable and nonsuitable recommendations through the Secretary of Interior and the President to Congress. Mineral surveys, environmental impact statements, and other appropriate information are submitted with the recommendations.

Wilderness Inventory

The inventory phase was completed in September 1981, and four areas in the Garnet Resource Area (GRA) were designated as WSAs: Wales Creek, Gallagher Creek, Hoodoo Mountain and Quigg West (see Location Map). Because the Wales Creek area was located on the proposed route of the Northern Tier Pipeline, it received an accelerated inventory for wilderness characteristics. The area was found to have wilderness values and was designated a wilderness study area in May 1979.

A decision by the Secretary of the Interior on December 30, 1982, stated that areas of public land that were less than 5,000 acres in size or had split estate ownership were not subject to wilderness review under Section 603 of FLPMA. However, areas less than 5,000 acres in size could be studied for wilderness under authority of Section 202 of FLPMA. Based on this decision, two areas that were less than 5,000 acres, Gallagher Creek (MT-074-151B) and Quigg West (MT-074-155), were studied under the authority of Section 202 of FLPMA. Wales Creek (MT-074-150) and Hoodoo Mountain (MT-074-151A) were studied under Section 603. Gallagher Creek WSA was released to multiple-use management by the Record of Decision for the Garnet Resource Management Plan/ Environmental Impact Statement (RMP/EIS) dated January 10, 1986. Boundaries and land status of the Wales Creek, Hoodoo Mountain and Quigg West WSAs are illustrated on the WSA Land Status Maps.

Wilderness Study

The study phase of the wilderness review process determines which WSAs will be recommended as suitable for wilderness designation and which will not. The BLM's Wilderness Study Policy establishes procedures to ensure that suitability recommendations are based on full consideration of all multiple-resource values of public lands, are consistent with established national policy, and assure the opportunity for all interested and affected members of the public and state and local governments to comment and be involved in the study process.

The study phase to determine wilderness suitability of the three remaining WSAs is ongoing, beginning with the Garnet RMP/EIS and continuing through this document.

Wilderness Reporting

Following completion of this Environmental Impact Statement (EIS), preliminary wilderness recommendations for the WSAs will be compiled in Wilderness Study Reports (WSRs). The report for each WSA will summarize the planning documents, the EIS, and the results of public participation.

The BLM's Interim Management Policy and Guidelines for Land Under Wilderness Review (USDI, BLM 1983a) serves as the principal document for managing the Wales Creek, Hoodoo Mountain and Quigg West WSAs until Congress acts. The interim guidance serves to ensure that the wilderness qualities of each WSA remain unaltered until Congress makes its final decisions.

LOCATION MAP

ENVIRONMENTAL SETTING

The three areas analyzed in this document are located in the Garnet Resource Area, Butte District, in western Montana (see Location Map). Table 1-1 lists the areas and their acreage.

TABLE 1-1
WILDERNESS STUDY AREAS ANALYZED IN THIS DOCUMENT

WSA	Number	Acreage
Wales Creek	MT-074-150	11,580
Hoodoo Mountain	MT-074-151A	11,380
Quigg West	MT-074-155	520

Descriptions of Individual WSAs

Each wilderness study area is described briefly. A more detailed description of each area can be found in Chapter 3.

Wales Creek

The Wales Creek WSA lies in the western portion of the Garnet Mountain Range in Powell County about 40 miles east of Missoula, Montana. Highway 200 leads to two access routes on the west, the Elk Creek Road and the Garnet Range Road. Highway 271 provides partial access from the east up McElwain Creek (see Land Status Map - Wales Creek WSA). Connection between Highway 271 and the Garnet Range Road is interrupted by a seasonal closure of the McElwain Fire Road for approximately 5 miles. Two cherrystem roads have been excluded from the WSA: Wales Creek Fire Road (approximately 5.2 miles), and Chamberlain Mountain Road (approximately 0.75 miles). A series of patented placer claims along Yourname Creek cherrystems into the WSA. Access to the claims is by a constructed, low standard road approximately 3.6 miles long.

The Wales Creek WSA is about four miles wide by six miles long and covers 11,580 acres. The WSA is bounded by private land on the east, McElwain Fire Road on the south, the Chamberlain Creek and Elevation Mountain Fire Road and State land on the west, and State land and Plum Creek Timber lands on the north. The topography ranges from 4,680 feet on Wales Creek to over 7,000 feet on Elevation Mountain. Chamberlain Mountain on the north side of the WSA is 6,860 feet.

The WSA offers several fishable streams flowing east into the Blackfoot River. The streams produce native cutthroat trout. In addition, the Wales Creek drainage has several thermal springs. The WSA is heavily forested with stands of spruce, lodgepole pine, Douglas fir and subalpine fir. Mining, grazing and firefighting activities have left structures and other imprints of human activity on portions of the WSA. However, the majority of the WSA is essentially undisturbed by human activity.

Forest Lands of Wales Creek WSA

The WSA contains habitat for a variety of wildlife including moose, elk, deer, beaver, black bear and mountain lion. The WSA also is used by nesting goshawks. Recreational use of the WSA includes hunting, fishing, hiking, camping and snowmobiling.

Hoodoo Mountain

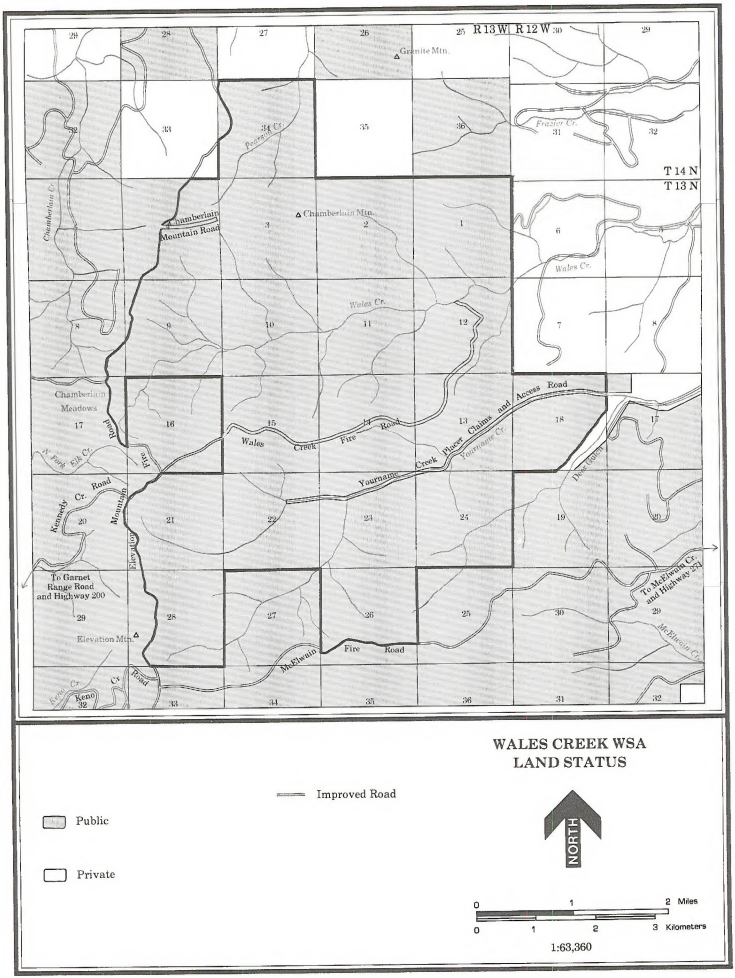
The Hoodoo Mountain WSA is in Powell County and lies along the Garnet Mountain Range between Avon and Helmville, Montana. Access is from Highway 141 at Nevada Lake Reservoir. The northern, western and southern boundaries are roads and private and state lands. The eastern boundary is formed by Hoodoo Mountain Jeep Road (see Land Status Map - Hoodoo Mountain WSA).

The Hoodoo Mountain area covers 11,380 acres and is about six miles long with widths varying from about 3 miles to less than 1 mile.

The elevations range from 7,438 feet at Devil Mountain to 5,200 feet on Cooper Creek. Hoodoo Mountain and Fourth of July Ridge are also visible landmarks.

The WSA is a forested area dotted with rock outcrops, open grassland parks and numerous large and small wet meadows. High, open sites offer spectacular views of broad mountain valleys and distant mountain ranges.

The WSA contains habitat for elk, moose, deer, black bear, porcupine and grouse. Marten, fisher, wolverine and mountain lion also use the area. Wet Cottonwood Creek contains a fishable population of cutthroat trout.



WALES CREEK WSA LAND STATUS

Improved Road

Public

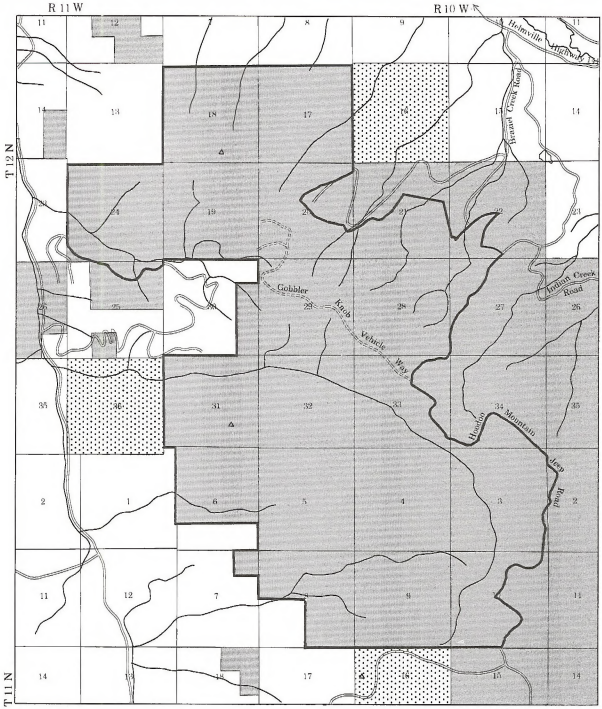
Private

NORTH

0 1 2 Miles

0 1 2 3 Kilometers

1:63,360



WSA Boundary

Public

State

Private

Improved Road

Unimproved Road or Vehicle Way

HOODOO MOUNTAIN WSA
LAND STATUS

1:63,360

NORTH

0 1 Miles 2

0 1 Kilometers 2 3

Forest Lands and Open Parklands of Hoodoo Mountain WSA

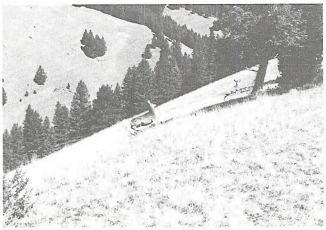
Grazing and perimeter logging have left only a few imprints of human activity on the WSA. Recreational use of the area includes hunting, hiking, rock climbing and camping. Limited snowmobile use occurs in the WSA.

Quigg West

The Quigg West 202 WSA is a tack-on to the Forest Service 60,050-acre Quigg (Slide Rock) RARE II area (Q1807). The WSA lies in Granite County some 20 miles west of Philipsburg, Montana. Access is via the Rock Creek Road (see Land Status Map - Quigg West WSA).

The WSA is small, covering approximately 520 acres of public land. National forest borders the north and west, and private land borders the south and east.

Elevation in Quigg West varies between 4,920 feet and 6,930 feet. The area contains two narrow, steep drainages, Capron Creek and Sheep Gulch. The forested ridges are dotted with open talus slopes. The WSA is essentially untouched by human activity and is in a natural state. Heavy vegetation and steep slopes make travel difficult; therefore, recreational opportunities are limited.



Mule Deer in Open Parkland Above Sheep Gulch

The WSA offers yearlong habitat for bighorn sheep, as well as habitat for elk and deer.

PLANNING PROCESS

Management direction for all BLM-administered public lands was designated in the RMP/EIS by Management Area (MA). Management Areas were identified as units of public land with similar resource potentials and limitations that lend themselves for management under a common set of goals and guidelines. Management Areas, goals and guidelines, including areas proposed for wilderness designation, are described in Appendix B of this document.

The Wilderness Study Areas were described and analyzed in considerable detail in the Garnet RMP/EIS, and much of that information is incorporated into this document. The effects of wilderness designations on other resources and the effects of developing other resource values on wilderness values are analyzed for each alternative in Chapter 4 .

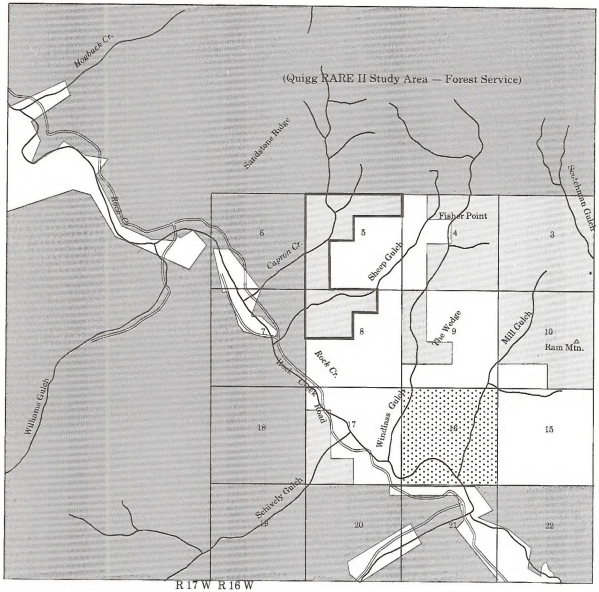
A discussion of the WSAs in terms of the five RMP alternatives, affected environment, and environmental consequences is contained in Appendix O of the RMP/EIS.

SCOPING

Wilderness concerns were addressed in scoping for the Garnet RMP/EIS. Issues for this document were essentially those identified in the RMP/EIS scoping that pertain to wilderness. During the RMP/EIS process, a preliminary list of 17 major issues was mailed to about 600 individuals and organizations for comment. In addition open houses on the issues were held in Drummond, Philipsburg, Ovando and Missoula, Montana for public input. The District Advisory Council also reviewed the preliminary issues for comment. Responses were approximately 100 verbal at the open houses and 60 written.

Public input combined with initial identification of issues by the BLM resulted in a listing of 9 issue topics considered significant for their potential impacts and, consequently, for analysis in this document:

* Wilderness Values
* Timber Management
* Minerals and Energy Developments
* Wildlife Habitats
* Recreation Use



WSA Boundary

Public

Forest Service

State

Private

Improved Road

QUIGG WEST WSA
LAND STATUS

NORTH

0 1 2 Miles

0 1 2 3 Kilometers

1:63,360

* Economic Situations
* Fire Control and Management
* Social Attitudes
* Realty (Rights-of-Way/Utility Corridors, Land Adjustments)

These topics were further defined to develop issue statements for impacts analysis. Impacts of the various management actions under the proposed action and reasonable alternatives were analyzed with regard to the following issue statements:

* Effects on wilderness values.
* Effects on timber harvest.
* Effects on exploration for and development of metallic minerals (primarily gold and silver).
* Effects on oil and gas exploration and leasing.
* Effects on wildlife habitats and numbers.
* Effects on recreation uses (ORV, snowmobile, hunting and primitive recreation).
* Effects on the local and national economies.
* Effects on fire suppression and fire management.

The following topics were raised during scoping but were not considered significant and consequently were not analyzed:

* Effects on grazing use levels.

Designation or nondesignation of the three WSAs would not affect grazing management (access or forage allocation). Access for maintenance of existing facilities is limited by topography to horseback or motorcycle. Maintenance access would be allowed to continue under all alternatives. No new facilities are planned in any of the WSAs under any alternative. Therefore, grazing management was not considered to be an issue warranting discussion.

* Effects on Threatened and Endangered (T&E) species

There are no occupied, critical or essential habitats of T&E species on any of the WSA's. Consequently, none of the alternatives would affect T&E species or their habitats.

* Effects on cultural resources

There are no known important cultural resource sites in the WSAs. There is some probability that future inventories could result in discovery of cultural resources. BLM will manage cultural resources under existing laws, regulations and guidance to protect cultural values.

* Effects on Social Attitudes

There are differences of opinion concerning wilderness designation at every level, local, regional, state and national. On a broader perspective, diverse opinions are associated with most considerations (timber harvest, recreation uses, etc.). Therefore, opinions cannot be a basis for deciding issues. In this EIS none of the alternatives for the WSAs would adversely affect local infrastructures or attitudes. The WSAs are relatively small and are not likely to attract levels of use that would exceed the capacities of the local utility, law enforcement and fire suppression system. There would be no influx of long-term residents to change local attitudes (e.g., change from rural values to more urban values).

* Effects on Rights-of-Way/Utility Corridors

In a regional study (1986), the Western Utility Group did not identify suitable utility corridors on any of the WSAs. This finding was carried forward into the Garnet Resource Area RMP. Consequently, none of the alternatives would impact potential corridor routes on the three WSAs.

CHAPTER 2

ALTERNATIVES, INCLUDING THE PROPOSED ACTION

INTRODUCTION

Chapter 2 describes the alternatives considered for each WSA. In addition, a table at the end of this chapter summarizes the environmental impacts of the alternatives for each WSA (Table 2-3).

In accordance with the Council of Environmental Quality (CEQ) regulation 40 CFR 1502.14 and the requirements of the BLM Wilderness Study Policy (Federal Register Vol. 47, No. 23, February 3, 1982), all reasonable alternatives relating to management of the WSA as wilderness or nonwilderness were analyzed:

A No Wilderness (No Action) alternative was analyzed for all three WSAs. This alternative recommends that no part of the WSA or 202 WSA is suitable for wilderness designation. In essence, this is a continuation of existing management actions, current and projected. The Garnet RMP/EIS describes the management actions and the environmental consequences of implementing them.

An All Wilderness alternative was analyzed for all three WSAs. This alternative considers the consequences of managing the entire WSA acreage as wilderness.

A Partial Wilderness alternative was analyzed for both the Wales Creek and Hoodoo Mountain WSAs. The partial alternatives considered the consequences of managing part of the WSAs as wilderness and part as nonwilderness.

FORMULATION OF ALTERNATIVES

The Garnet RMP/EIS incorporated the draft Wilderness EIS. The wilderness alternatives selected for analysis in this final EIS were based on the RMP alternatives. Alternative C of the RMP constituted the All Wilderness Alternative for the EIS. Alternative D constituted the Partial Wilderness Alternative for WSAs large enough to be considered for partial designation. Alternatives A, B and E were essentially No Wilderness alternatives (although Alternative E recommended wilderness designation for Quigg West contingent on the adjacent Forest Service study area being designated wilderness).

The draft wilderness proposed action and alternatives made in the RMP were carried forward to this document. The following tables describe the wilderness recommendations of the RMP alternatives and show how they relate to the alternatives in this final EIS.

TABLE 2-1
ACRES RECOMMENDED FOR WILDERNESS BY ALTERNATIVE - GARNET RMP/EIS

WSA	*A*	*B*	*C*	*D*	*E*
Wales Creek	0	0	11,580	4,900	0
Hoodoo Mtn.	0	0	11,380	5,870	0
Quigg West	0	0	520	520	520

TABLE 2-2
ACRES RECOMMENDED FOR WILDERNESS BY ALTERNATIVE - GARNET WILDERNESS EIS

WSA	*All Wild*	*No Wild*	*Part Wild*
Wales Creek	11,580	0	4,900
Hoodoo Mtn.	11,380	0	5,870
Quigg West	520	0	N/A

The public was invited to take a significant role in formulating the issues and the alternatives of the RMP. The Partial Wilderness Alternatives were derived by separating areas with high commercial values (timber, minerals, etc.) from those with high wilderness and noncommercial resource values. Boundaries were drawn along ridgelines, drainages, and property ownership lines.

ALTERNATIVES ELIMINATED FROM DETAILED STUDY

Designation of each of the WSAs as Areas of Critical Environmental Concern (ACECs) was considered. None of the areas met the criteria for designation through the RMP process. Consequently, this alternative was eliminated from further consideration.

Other designations that were considered included Outstanding Natural Areas and Research Natural Areas. These were

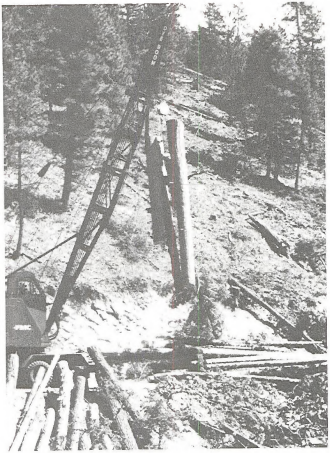
annually, or about 5.5 percent of the Resource Area annual allowable cut.

Developments for harvesting the 6,400 acres of CFL would occur in stages or entries, with each entry accounting for a segment of the timber harvest of the available CFL. Harvest entries would occur at approximately 5 - 10 year intervals, and would be staggered in location to produce desired big game cover/forage patterns. The first (initial) entry would be in lower Yourname Creek, the second entry would occur in Pearson Creek drainage, the third entry would be into middle Yourname Creek, etc. Dispersed spatial arrangement of timber sales is designed to reduce the cumulative impacts of harvest on individual watersheds or wildlife management areas. The pattern of timber sale placement depends on the resource values that would be impacted and the silvicultural objectives for each proposal. Total development of available CFL would require construction of 51 miles of new road and reconstruction of 4 miles of existing road (see Wales Creek Development Map - Proposed Action and Partial Wilderness Alternative). On Wales Creek WSA, there would be approximately 14 cutting units per entry, averaging about 30 acres in size for a surface disturbance of 420 acres per entry. Approximately 5 miles of road would be constructed under each entry. Access into Yourname Creek is private; therefore, before timber harvest could occur, legal access into Yourname Creek drainage would have to be obtained. As a mitigating measure, reclamation, including replanting of trees would be completed in each cutting entry before new areas would be logged.

Logging would occur mainly in the summer with some winter logging possible at lower elevations.

Under the timber harvesting guidelines on Management Areas 4 and 5 the following restrictions are key mitigation measures:

* Cutting units in MA 4 would not exceed 20 acres in size and 40 acres in MA 5, and they would be irregular in shape;
* Cutting units would be spaced a minimum of 600 feet apart;
* Buffer zones would be provided around big game habitat components such as wallows, mineral licks and foraging or resting sites;
* Timber harvest would be designed to maintain or develop security habitat adjacent to natural forage areas;
* Seasonal or yearlong closures of roads in MA 4 and 5 to motor vehicle use would be evaluated considering the sensitivity of big game habitat elements (elk summer/fall habitat components, big game summer/fall range, etc.) that would be affected .



Cable Yarding Logs at Garnet Resource Area

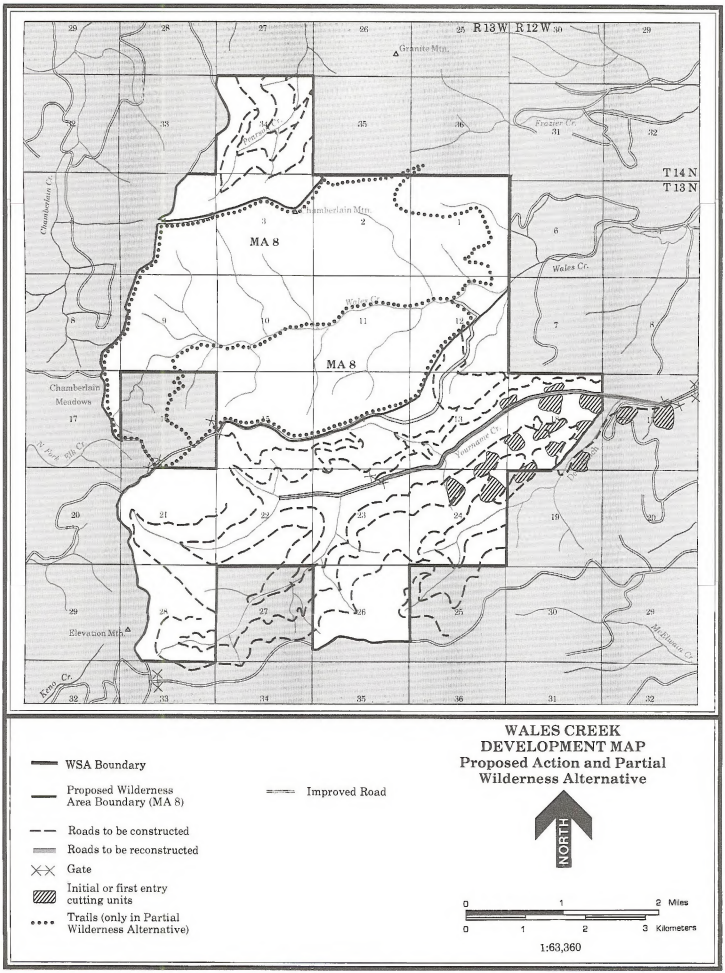
Management Area guidelines prohibit using mechanized equipment on slopes greater than 40 percent; consequently, prescribed burning would have to be used on logged sites to dispose of slash and to prepare the site for seedling reestablishment (see Fire Management Actions for total acreage of slopes greater than 40 percent). On slopes less than 40 percent, slash would be mechanically piled and burned.

Other mitigation measures that would be applied to timber harvest practices are described in the following appendices:

Management guidelines 5 - 20 for MA 4 and 5 - 17 for MA 5 from Management Area Guidelines in Appendix B;

Standards described under "Road System" and "Logging Practices" from Best Management Practices in Appendix C;

Recommendations from the Final Report of the Montana Cooperative Elk-Logging Study (Appendix D).


R 13 W R 12 W
Granite Mtn.
Frazier Cr.
T 14 N
T 13 N
Chamberlain Cr.
Chamberlain Mtn.
MA 8
Wales Cr.
Wales Cr.
MA 8
Chamberlain Meadows
N. Fork Silk Cr.
Yourmouth Cr.
Elevation Mtn.
Kron Cr.
McAllister Cr.
WSA Boundary
Proposed Wilderness Area Boundary (MA 8)
Roads to be constructed
Roads to be reconstructed
Gate
Initial or first entry cutting units
Trails (only in Partial Wilderness Alternative)
Improved Road
WALES CREEK
DEVELOPMENT MAP
Proposed Action and Partial
Wilderness Alternative
NORTH
0 1 2 Miles
0 1 2 3 Kilometers
1:63,360

Minerals Management Actions

The entire WSA would be available for mineral exploration and development. A WGM Incorporated publication (1983 - referred to as the GEM) characterized the potential for discovering metallic mineral resources (gold, silver, etc.) on the Wales Creek WSA as moderate to high. The northern portion was classified as moderate potential based on limited direct evidence, including the presence of a geologic setting similar to known metal deposits and occurrences in adjacent areas. The southern portion was classified as high potential based on the geologic environment and local mines with significant historic metal concentrations. High anomalous gold values have been found in panned concentrate samples taken in the vicinity of the WSA. There are 28 lode and placer claims (unpatented) recorded on the following locations of the WSA: T13N, R12W, Sec. 18; T13N, R13W, Sections 13, 22, 23 and 24 (described in Table 3-5, Chapter 3 and shown on the Wales Creek Minerals Map).

It is predicted that there would be one exploration operation projected over the next 15 to 20 years. This exploration operation would require minimal road access of up to a half mile and no more than 3 acres for drilling, trenching or placer sampling. It is expected that two claims could be developed in the WSA in the foreseeable future. The procedures for developing claims are discussed in Appendix D of the Garnet RMP/EIS. It is projected that each development would be small in scale and roads constructed and acreage disturbed would not exceed 5 acres per claim. The following are specific actions that would be associated with each of the types of exploration mentioned above.

* Drilling would cause an estimated maximum surface disturbance of one-half mile of new road (12-foot width) and a 40-foot by 70-foot pad (including a water/mud pit).
* Trenching would require, at most, one-half mile of new road and a trench 8 feet wide by 12 feet deep by 100 feet long.
* A placer site would consist of a sluice or washing plant, two settling ponds (each 20 feet wide by 30 feet long by 10 feet deep) and diggings (100 feet by 100 feet). New road construction (if needed) would again be no more than one-half mile in length.

Energy (Oil and Gas) Management Actions

The entire WSA would be available for oil and gas leasing subject to leasing procedures described in Appendix E of the Garnet RMP/EIS. Prior to 1985, 1,600 acres were under post-FLPMA leases (see Table 3-6, Chapter 3). One lease of approximately 640 acres (approximately 40 acres in the WSA) was canceled December 1, 1985. Another lease covering approximately 1,400 acres of the WSA was closed March 29, 1988. Two lease applications in T13N, R13W, Sec 14, SE1/4 are pending until a decision on wilderness is made.

The GEM (WGM Inc., 1983) indicates a moderate potential for oil and gas occurrence. However, based largely on the geologic environment, the probability of developable concentrations (marketable qualities and quantities) being found is considered low. Although not likely, should some exploration occur on the WSA the following characteristics would be expected. Experience with seismic exploration in this area suggests that two to six vibrating trucks and one recorder truck might conduct summer testing once every ten years. Due to the sizeable acreage under no surface occupancy and due to other management stipulations covering the WSA, exploration routing would most likely be along ridge tops and existing logging roads. Surface disturbance would be negligible because vibrator units do not use shot holes and existing access would be used to the extent possible.

No development is projected to occur based primarily on the following factors:

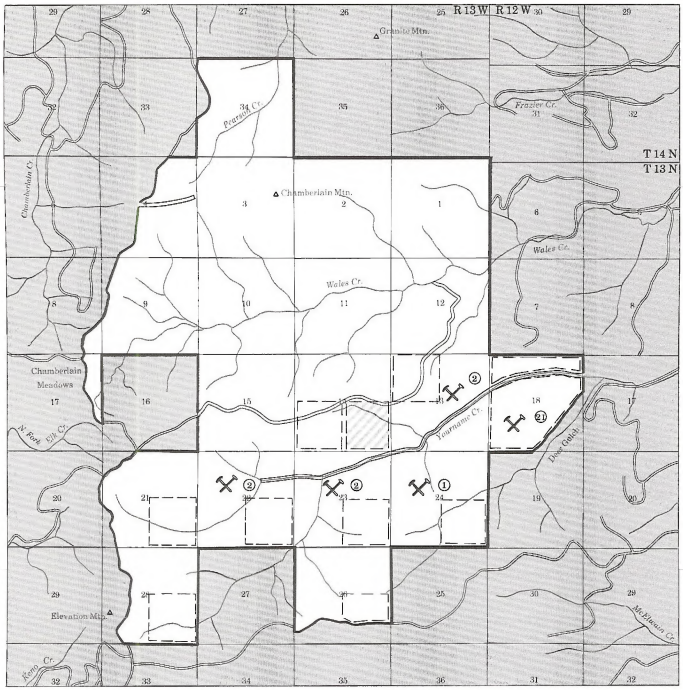
* a predicted low potential for development;
* minor historic oil and gas activity in the area;
* low industry interest in leasing the area;
* cost of developing a wildcat well;
* low return in price per barrel of oil on investments in exploration and development (includes costs of extracting and transporting oil and gas);
* rugged terrain;
* restrictions on surface occupancy (no more than 630 acres available), seasonal closures, and other management stipulations on oil and gas activities (see stipulations listed below).

Whatever oil and gas activities might occur, sensitive values would be protected by appropriate stipulations:

No surface occupancy on - 4,900 acres in the Wales Creek drainage (MA 9 on the Wales Creek Management Areas Map - Proposed Action);

- slopes greater than 30 percent (5,080 acres outside of MA 9);
- riparian areas outside of MA 9 (970 acres).

Seasonal use restrictions on 6,680 acres of elk summer/fall habitat components and big game summer/fall range (MAs 4 and 5, respectively, on the Wales Creek Manage-



WALES CREEK MINERALS MAP

- WSA Boundary
- Pending oil & gas lease applications
- Areas previously leased for oil & gas (post FLPMA leases)
- Sections containing mining claims
- ② Number of claims in each section

NORTH

0 1 2 Miles

0 1 2 3 Kilometers

1:63,360

ment Areas Map - Proposed Action) - no activity from September 1 through November 30, annually.

Following abandonment of exploratory wells, the drill sites would be rehabilitated.

Additional stipulations specified in the management guidelines for MAs 4 and 5 (Appendix B), and standard stipulations for oil and gas leasing (Appendix E of the Garnet RMP/EIS).

Wildlife Habitat Management Actions

The entire WSA provides a large block of elk security area. This alternative does allow management the flexibility to enhance the various habitat characteristics (forage areas, hiding and thermal cover, etc.) of the area.

Under management guidelines for the Wales Creek drainage (see guidelines for MA 9 in Appendix B), 4,900 acres would remain a big game security area, largely undisturbed by resource management activities. Motor vehicle access into the area would not be developed, although the Wales Creek Fire Road would be open to public use. The only motorized use authorized inside of MA9 would be snowmobiles. However, MA 9 guidelines do not preclude opportunities to maintain or enhance wildlife habitats. The wet meadows associated with Wales Creek provide a key habitat type for a diversity of wildlife species, particularly moose, elk and beaver. Proposed habitat enhancement would involve cutting coniferous trees that are encroaching on those wet meadows, and cutting decadent willow and alder within the meadows. Following the cutting phase of the treatment, the meadows would be control-burned. Approximately 100 acres of wet meadows would be treated to stimulate resprouting of stagnant willow and invigorate ground cover thereby improving the forage base for moose, elk and deer and the conditions for reestablishment of beaver.

Wet Meadow at the Upper End of Wales Creek

Management emphasis for the remaining 6,680 acres of the WSA would be to provide big game forage, cover and travel components interspersed within and adjacent to security habitat. Management direction would comply with the objectives and guidelines described for MAs 4 and 5 in Appendix B. In general, the key management emphases are summarized as follows:

* Resource management actions would be oriented toward providing forage, cover and travel components interspersed within and adjacent to security areas for big game;
* Timber cutting units would provide openings for increasing big game forage;
* Existing vehicle ways would remain closed to retain area for walk-in hunting. New logging roads will be open for logging operations for 2 to 3 year periods and then evaluated for public use;
* Snowmobile use would continue in the WSA and be allowed to increase to a projected 150 visitor days/year.

More specifically, guidelines that would be applied to the 6,680 acres are:

* Timber cutting units would be limited in size to 40 acres or less and generally be irregular in shape;
* Length of sale contracts would be limited to 3 years or less;
* Logging roads would be open for logging operations for 2 to 3 years and then evaluated for public use;
* Distances of no less than 600 feet would be maintained between cutting units and additional entries would occur no more often than 5 - 10 year intervals;

Recreation Management Actions

The 4,900 acres contained in the Wales Creek drainage would be managed under MA 9 objectives and guidelines (Appendix B). Under these guidelines, unique or natural characteristics would be preserved. Opportunities for primitive recreation uses would be afforded under the MA 9 designation. Nonmotorized activities would be emphasized over motor vehicle use, although snowmobiling would be a grandfathered use.

On the remaining 6,680 acres management would emphasize maintaining and enhancing elk summer/fall habitat components and summer/fall range for big game species (see Appendix B for the objectives and guidelines for MAs 4 and 5). In

addition some opportunities for primitive recreation uses would be afforded, although not as extensively as under MA 9 designation.

Motor Vehicle Use

Cherrystemmed and boundary roads would remain open to general motor vehicle use unless specifically closed by the ORV and road management plan. That plan has been completed and is available at the Garnet RAH (Implementation Plan and EA for ORV Designations, EA number MT 074-06-05, July 1986, 42 pages). The lower one-half mile of Wales Creek Fire Road is currently closed because of vehicle-caused erosion, and it would remain closed to prevent further erosion. The remaining 5 miles would be open to general motor vehicle use, unless resource conditions indicate a needed closure. Chamberlain Mountain Road (see Wales Creek Land Status Map, Chapter 1) is not open now, nor would it become accessible to motor vehicles due to the yearlong closure of all but the southern 2 miles of Elevation Mountain Fire Road. Yourname Creek Road (see Wales Creek Land Status Map, Chapter 1) is a private access to a patented claim along Yourname Creek and is not open to the public. The WSA is presently closed to motorized vehicle use. Management Area 9 will generally be closed to motor vehicle use. Future motor vehicle use of MAs 4 and 5 would be restricted to roads and trails designated as open. New roads constructed for timber harvest would be open to logging operations for 2 to 3 years and then evaluated for public use (see guidelines in Appendix B). The following assumptions were made concerning motor vehicle and hunting uses:

* Hunting is the major contributor to vehicle use of boundary and cherrystemmed roads. Hunting use is estimated at 85 percent (400 visitor days/year) of the total motor vehicle use with 15 percent (70 visitor days/year) associated with 4-wheel driving, sightseeing, photography, and snowmobile access. Ninety percent of the hunting use of the WSA or 360 visitor days/year is assumed to be walk-in hunting leaving vehicles at the boundary. The remaining 10 percent is assumed to be road hunting along the boundary of the WSA.

Snowmobile Use

Snowmobiling would be allowed from December through April in the WSA. There is a designated snowmobile trail located to the west of the WSA, and a portion of it runs common with the western boundary of the WSA. Snowmobile use of the trail is estimated at 1,500 use days/year. Use within the WSA is low, estimated at 30 snowmobile use days/year.

Snowmobile Use of Designated Trail

Twenty of those days are assumed to occur on Wales Creek Fire Road and 10 use days on the Yourname Creek area. Dense timber and few open areas limit the amount of use on the WSA. Timber harvest in Yourname Creek drainage would open that area and increase the potential for snowmobile use to an estimated 150 use days/year. There would be no restrictions to this increased use with this alternative.

Hiking

Wales Creek WSA is part of a walk-in hunting complex administered cooperatively by BLM, Montana Department of Fish, Wildlife and Parks and Champion International. Approximately 90 percent (360 hunter days/year) of the current hunting use is assumed to be walk-in. Approximately 6 miles of unconnected trail segments (supposed remnants of old Blackfoot Forestry Protective Association [BFPA] and livestock herding trails) along Wales Creek appear to be relatively well used based on tread visibility. Use of those trail segments was estimated at 30 percent (approximately 110 visitor days/year) of the walk-in hunting on the Wales Creek area. Use of similar trail segments located in Yourname Creek drainage is unknown. Connecting all of the trail segments is proposed to provide an accessible and well-defined trail system of approximately 8 miles.

Primitive Camping

Currently this type of use occurs at undesignated sites adjacent to access roads and in association with hunting. Primitive camping is estimated to be entirely associated with hunting and projected at 40 camper days/year or 10 percent of the total hunting use. There would be no designation of sites in the foreseeable future.

Developed Recreation

Developed recreational facilities, such as campgrounds and picnic areas, would not be constructed in the WSA. Management emphasis would be on big game habitat enhancement, and recreation use would be oriented more to primitive, backcountry types of opportunities.

Fire Management Actions

Limited fire suppression (i.e., absence of mechanized/ground-disturbing equipment except to prevent the loss of human life or high-value property) would be practiced on 4,900 acres in the Wales Creek drainage and on 970 acres of riparian area outside the Wales Creek drainage.

Full suppression of wildfires would be applied to approximately 5,710 acres in Deer Gulch, Yourname Creek and Pearson Creek drainages, and would include the use of mechanized equipment.

Prescribed fire would be used in conjunction with hand cutting on approximately 100 acres of wet meadows along Wales Creek to improve forage for moose, elk and beaver (see Wildlife Management Actions). Prescribed fire would also be used on slopes greater than 40 percent (approximately 4,500 acres) within the 6,680-acre multiple-use portion of the WSA to prepare sites for seedling establishment, reduce slash, and enhance big game forage production. Slopes greater than 40 percent are too steep for mechanical piling and burning of slash.

Realty Management Actions

Under this alternative 6,600 acres (4,900 acres in MA 9 and 1,700 acres in MA 4) would be classified as avoidance areas for utility rights-of-way. The remaining 4,980 acres would be available for utility corridors consistent with management goals for MA 5 (see Appendix B).

No utility corridors are anticipated, as the WSA is largely unsuited because of steep terrain and erosive granitic soils. According to the Western Utility Group (1986), the only potential corridor identified in the Garnet Resource Area is not in or near the WSA.

All Wilderness Alternative

All of the 11,580-acre Wales Creek WSA would be recommended for wilderness designation (see Wales Creek Management Areas Map - All Wilderness Alternative).

This alternative emphasizes preservation of wilderness values over multiple-use management. Management would generally focus on retaining the primeval character of the environment and allowing natural ecological processes to operate freely. If Congress designates the WSA as wilderness, specific details of management actions would be described in a Wilderness Management Plan.

Following are descriptions of management actions prescribed under this alternative.

Wilderness Management Actions

The entire WSA would be managed to preserve the existing naturalness, solitude, and primitive recreation opportunities.

Timber Management Actions

None of the approximately 10,850 acres of Commercial Forest Land (CFL) would be managed for timber production. No timber will be harvested.

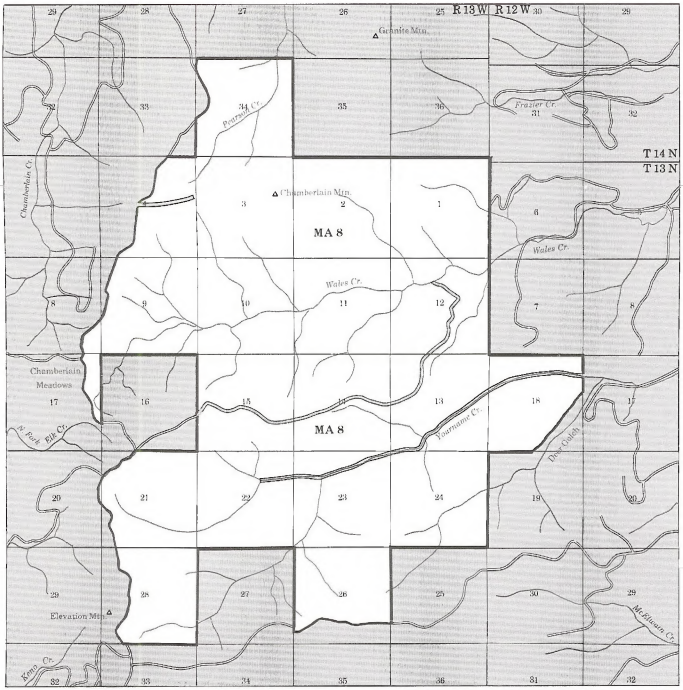
Minerals Management Actions

The entire WSA would be withdrawn from mineral entry. Wilderness designation closes the area to location of future mining claims and mineral development under current laws. Two existing claims are expected to be determined valid and could be developed under a Plan of Operations.

Under wilderness designation, the 28 unpatented claims in Yourname Creek would be managed under 43 CFR 8560.4-6 to preserve wilderness values. Essentially, 43 CFR 8560.4-6 provides that-

* Unpatented claims would be subject to validity exams before continuing.
* Holders of valid mining claims may continue operations under the mining laws that applied before WSA/wilderness designation.
* An approved Plan of Operations is required before further development.
* Mining activities would be stipulated to minimize the impairment of wilderness values, to minimize soil erosion and to maintain (to the extent possible) high quality surface and ground waters.
* Sites would be rehabilitated after mining operations cease.

Of the 28 existing claims, it is expected that only 10 percent would pass validity exams, assuming there is only a fair likelihood of developable ore deposits being found. It is predicted that 75 percent of those claims passing validity



WSA Proposed Wilderness Boundary

MA 8 Area Recommended for Wilderness Designation

WALES CREEK MANAGEMENT AREAS
All Wilderness Alternative

NORTH

0 1 2 Miles
0 1 2 3 Kilometers

1:63,360

exams would have developable ore deposits. Based upon the assumptions made, we would project that 2 of the 28 claims would be developed. Under the Proposed Action, a predicted 5 acres of surface disturbance would result from developing a claim.

Energy (Oil and Gas) Management Actions

The entire WSA would be closed to further leasing.

No action would be taken on the pending lease applications until a wilderness determination is made. Should those leases be pursued, development could proceed under this alternative governed by the stipulation for wilderness areas (see Appendix E of the Garnet RMP/EIS).

Wildlife Habitat Management Actions

Management direction would be to let nature determine habitat qualities and patterns. Because of emphasis on a natural environment, management options would be limited. Under this alternative, habitat manipulations would be primarily influenced by natural phenomena such as fire, disease, tree blowdown, etc.

Habitat improvement on 100 acres of wet meadows along Wales Creek described under the Proposed Action (Wildlife Habitat Management Actions) would not occur under wilderness management. Implementation of this project requires the use of mechanical equipment that would not be allowed under wilderness designation. Forage openings established by timber harvest practices would also be forgone with an all wilderness designation.

Recreation Management Actions

Under this alternative natural values would be preserved and protected and recreation use would be oriented toward primitive types of opportunities.

Motor Vehicle Use

The WSA would be managed to provide nonmotorized recreational opportunities. The Chamberlain Mountain Road (0.75 mile) and Wales Creek Fire Road (approximately 5.2 miles) would remain open to motorized vehicle use since they are roads that are cherrystemmed into the WSA. Adjacent roads would continue to provide access to the WSA; therefore, hunting use is expected to remain at or near current levels (400 visitor days/year).

Use of Yourname Creek Road would continue as private access to a patented mining claim that is cherrystemmed into the WSA. Use would be light as predicted under the Proposed Action because it is limited to the patent holder.

Snowmobile Use

The proposed wilderness area would be closed to snowmobiles.

Hiking

Walk-in hunting use would probably continue at or near its current level which is described under the Proposed Action (approximately 360 hunter days/year).

A 24-mile trail system would be developed within the proposed wilderness area. It would include segments of old BFPA and livestock herding trails in Wales Creek and Yourname Creek areas. Wales Creek Fire Road would be converted to a foot trail and incorporated into the system. Existing roads and trail segments would probably account for no more than 8 to 12 miles. Construction of 12 to 16 miles of new trail would be necessary to complete the system. Three trailheads would be located to access the trail system. Sites for these would be selected concurrent with development of the trail system. Possible locations include: one near Elevation Mountain, one near the junction of Elevation Mountain Fire Road and Wales Creek Fire Road and one where the east boundary intersects Yourname Creek Road. Legal access would be needed to the Yourname Creek trailhead. Minimum-facility parking areas would be developed at each trailhead. The area would provide spaces for parking 4 to 6 vehicles, and vertical wood-post vehicle barriers would be installed if needed.

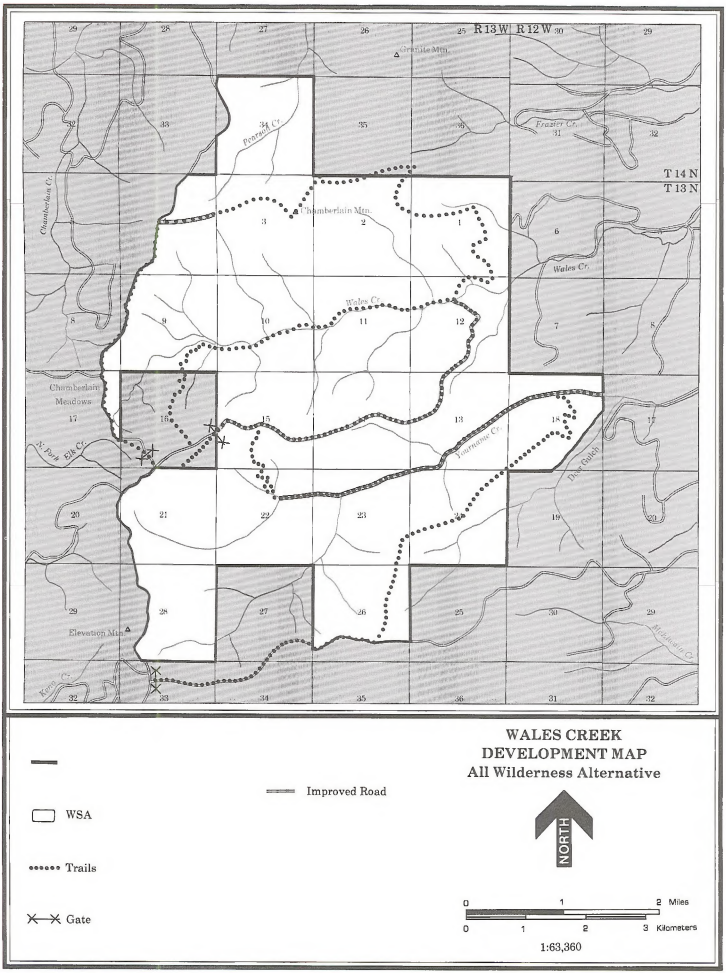
Primitive Camping

Wilderness camping would be allowed, although in the foreseeable future no specific sites would be designated. Camping use associated with hunting is predicted to remain at 10 percent of the hunting use as assumed under the Proposed Action.

The Wales Creek Development Map - All Wilderness Alternative shows the locations of trails, trailheads and road closure gates.

Fire Management Actions

Fire suppression activities would be restricted to the use of fixed-wing aircraft, helicopters, and hand crews. Neither motorized vehicle travel nor the use of heavy equipment (bulldozers) would be permitted except to prevent loss of human life or to protect high-value property.


R 13 W
R 12 W
T 14 N
T 13 N
Granite Mtn.
Chamberlain Mtn.
Fontana Cr.
Frazier Cr.
Chamberlain Cr.
Wales Cr.
Chamberlain Meadows
N. Fork Elk Cr.
Elk Cr.
Tarmachee Cr.
Thorn Gulch
Elevation Mtn.
Michael Cr.
Kelly Cr.
Improved Road
WSA
Trails
Gate
WALES CREEK
DEVELOPMENT MAP
All Wilderness Alternative
NORTH
0 1 2 Miles
0 1 2 3 Kilometers
1:63,360

Prescribed fire would not be used because of the size of the WSA and the difficulty of controlling fires that burn onto adjacent private lands and nonwilderness public lands.

Realty Management Actions

The proposed wilderness area would be excluded from establishing utility corridors and rights-of-way.

Partial Wilderness Alternative

This alternative emphasizes preservation of wilderness values on 4,900 acres and multiple-use management (with emphasis on wildlife habitat values) on 6,680 acres.

If Congress selects this alternative land uses would be allocated with emphases as described:

> Wilderness designation for 4,900 acres in the Wales Creek drainage (MA 8 on the Wales Creek Management Areas Map - Partial Wilderness Alternative).
>
> Multiple-use management (other than wilderness) with emphasis on wildlife values for the remaining 6,680 acres.

Wilderness Management Actions

Wilderness values would be protected on 4,900 acres by wilderness (statutory) designation of the Wales Creek drainage.

Timber Management Actions

Wilderness designation for the Wales Creek drainage would withdraw approximately 4,900 acres (approximately 4,450 acres of CFL) of the WSA from commercial timber harvest. That area contains a potential harvest averaging approximately 300 mbf/year.

A description of the timber management activities for the remainder of the WSA is the same as that described under Timber Management Actions of the Proposed Action.

Minerals Management Actions

The 4,900-acre Wales Creek drainage would be withdrawn from mineral entry. Wilderness designation closes the area to location of future mining claims and mineral development under current laws. Two existing claims are expected to be determined valid and could be developed under a Plan of Operations.

The remainder of the WSA, 6,680 acres, would be open to the exploration and development of minerals. The exploration and development scenarios, including stipulations, for this part of the WSA are the same as described under Minerals Management Actions of the Proposed Action.

Energy (Oil and Gas) Management Actions

The 4,900-acre Wales Creek drainage would be closed to leasing.

The remainder of the WSA, 6,680 acres, would be open to oil and gas leasing, exploration, and development. However, no development is projected in the foreseeable future.

Wildlife Habitat Management Actions

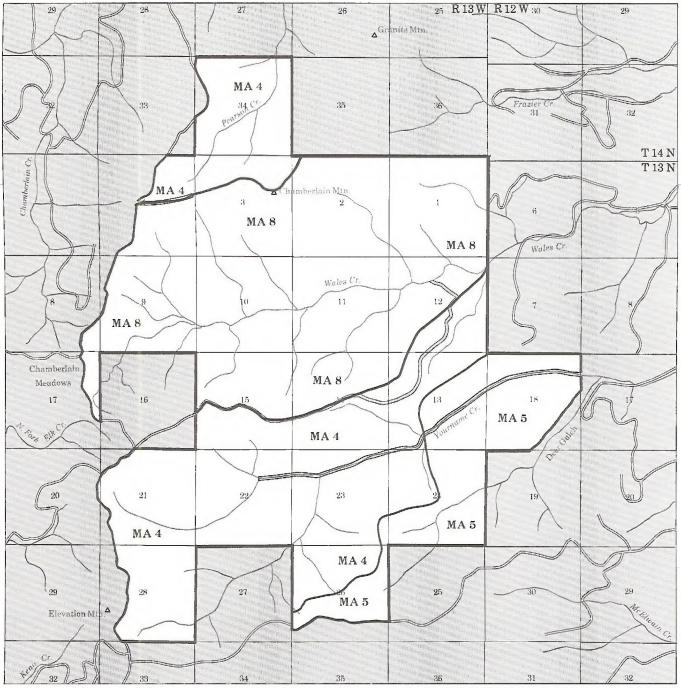
Wilderness designation of the 4,900-acre Wales Creek drainage would provide a large block of security habitat. Management direction would be to let nature determine habitat qualities and patterns. Because of emphasis on a natural environment, management options would be limited. Habitat manipulations would be primarily influenced by natural phenomena such as fire, disease, tree blowdown, etc. Treatment of approximately 100 acres of wet meadows along Wales Creek would not occur because such treatment would require the use of mechanical equipment that is not allowed under wilderness designation.

Management direction for the 6,680 acres recommended as nonwilderness would be to provide forage, cover and travel components interspersed within and adjacent to security areas. This action would be done, primarily, through applying the guidelines for MAs 4 and 5 (see Appendix B) to timber harvest. Stipulations would be the same as those described under Wildlife Habitat Management Actions of the Proposed Action.

Recreation Management Actions

Under this alternative the natural values of Wales Creek drainage would be preserved and protected, and the recreation use would be oriented toward primitive types of opportunities.

Management of the 6,680-acre area not recommended for wilderness would be the same as described under the Proposed Action.



WALES CREEK
MANAGEMENT AREAS
Partial Wilderness Alternative

WSA Boundary

MA 4 Elk Summer/Fall Habitat Components

MA 5 Big Game Summer/Fall Range

MA 8 Area Recommended for Wilderness Designation

NORTH

0 1 2 Miles

0 1 2 3 Kilometers

1:63,360

Motor Vehicle Use

Wales Creek Fire Road would be closed to motor vehicle use. Closure would be effected by a gate located at the junction of Wales Creek Fire Road and Elevation Mountain Fire Road (see Wales Creek Development Map - Partial Wilderness Alternative). Current motor vehicle use of the Wales Creek Fire Road (approximately 470 visitor days/year) would be displaced to adjacent boundary roads. The estimated hunting use (400 hunter days/year) would still apply to the WSA.

Assuming access is acquired, Yourname Creek Road would be open to facilitate timber harvest and provide recreation access to public lands in Yourname Creek drainage. Future motorized vehicle use in MAs 4 and 5 will be restricted to open roads and trails.

Snowmobile Use

Current snowmobile use of Wales Creek Fire Road and Yourname Creek area (described under the Proposed Action) would be expected to continue. Timber harvest would improve the potential for snowmobile use as described under the Proposed Action (see Recreation Management Actions).

Hiking

A 16-mile trail system would be developed to allow access into and enjoyment of the area recommended for wilderness. It would include approximately 6 miles of unconnected segments of old BFPA and livestock herding trails along Wales Creek and 4 miles of Wales Creek Fire Road. Approximately 10 miles of new trail would be constructed to complete the system. Current walk-in hunting, estimated at 360 hunter days/year under the Proposed Action, would be the same under this alternative.

Primitive Camping

Primitive camping would continue under this alternative in association with hunting and anticipated wilderness uses. There would be no designated sites as would be the case with the Proposed Action and the All Wilderness Alternative.

Fire Management Actions

Fire suppression on the 4,900-acre area recommended for wilderness would be the same as described for the entire WSA under the All Wilderness Alternative. Prescribed fire would not be used because of the equipment needed, small size of the proposed wilderness and the difficulty in controlling fires from spreading onto private lands or nonwilderness public lands.

Full fire suppression would be practiced on approximately 5,710 acres (excludes the 4,900 acre proposed wilderness and 970 acres of riparian area). Limited suppression (ie., no use of mechanized, ground-disturbing equipment except to prevent the loss of human life or high-value property) would be applied to approximately 970 acres of riparian areas.

Prescribed fire would be used on slopes greater than 40 percent (approximately 4,500 acres) to prepare sites for seedling establishment, reduce slash and improve forage composition.

Realty Management Actions

The 4,900-acre Wales Creek drainage would be unavailable for utility rights-of-way.

Management Area 4 located within the 6,680 acres not recommended for wilderness (see Wales Creek Management Areas Map - Partial Wilderness Alternative) and totaling 1,700 acres would be a corridor avoidance area. The remainder of the area totalling 4,980 acres would be available for permitting utility rights-of-way. However, rights-of-way through the WSA are not likely, since the Western Utility Group did not identify any potential corridors in or near the WSA in its 1986 corridor study.

DESCRIPTION OF THE ALTERNATIVES FOR HOODOO MOUNTAIN WSA

Proposed Action (No Wilderness/No Action)

No part of the 11,380-acre Hoodoo Mountain WSA would be recommended for wilderness designation. This alternative emphasizes resource management over statutory preservation of the identified wilderness values. With this alternative the land use would be allocated with an emphasis as follows:

> Upper reaches of Wet Cottonwood Creek (1,700 acres) would be managed under special management area guidelines (MA 9 - see Appendix B);
>
> The remainder (9,680 acres) would be managed under guidance for specific big game habitats (MAs 4, 5 and 6 - see Appendix B).

Locations of the management areas are shown on the Hoodoo Mountain Management Areas Map - Proposed Action (No Wilderness/No Action).

Management actions for each of the major resource topics are described below.

Wilderness Management Actions

There would be no wilderness management actions taken with this alternative.

Timber Management Actions

Hoodoo WSA has approximately 9,000 acres of Commercial Forest Lands (CFL) with a potential for harvest averaging 635 mbf/year.

Approximately 1,000 acres of CFL in the upper Wet Cottonwood Creek drainage (MA 9) would not be harvested for the foreseeable future. The potential harvest would average approximately 100 mbf/year.

Approximately 8,000 acres of CFL in the Braziel, lower Wet Cottonwood, Lost and Hall Creek drainages would be available for timber management. These areas would be managed according to the guidelines for MAs 4, 5, and 6 (see Appendix B), which regulate timber management to meet wildlife habitat management objectives. The CFLs have a harvest potential that would average approximately 535 mbf, annually; however, stipulations assigned under various management guidelines (see mitigation measures discussed below), would reduce the actual harvest by about 20 percent to an average annual cut of 430 mbf. The 430 mbf average annual harvest represents about 6 percent of the RA annual allowable cut.

Developments for harvesting the 8,000 acres of CFL would occur in stages or entries, with each entry contributing a segment of the full development. Harvest entries would occur at approximately 5 to 10 year intervals, and locations would be staggered in order to produce desired wildlife cover/forage associations. Entries in the WSA would begin (initial entry) in the west fork of Braziel Creek, the second entry would occur southwest of Fourth of July Ridge, the third entry would be on the north side of Wet Cottonwood Creek (below MA 9), etc.

Under full development approximately 44 miles of new road construction would be needed (see Hoodoo Mountain Development Map - Proposed Action). There would be approximately 10 cutting units per entry on Hoodoo Mountain WSA, averaging 30 acres in size. At each entry there would be approximately 300 acres of disturbance over a 2-3 year period.

Logging would occur mainly in the summer with some winter cutting possible at lower elevations.

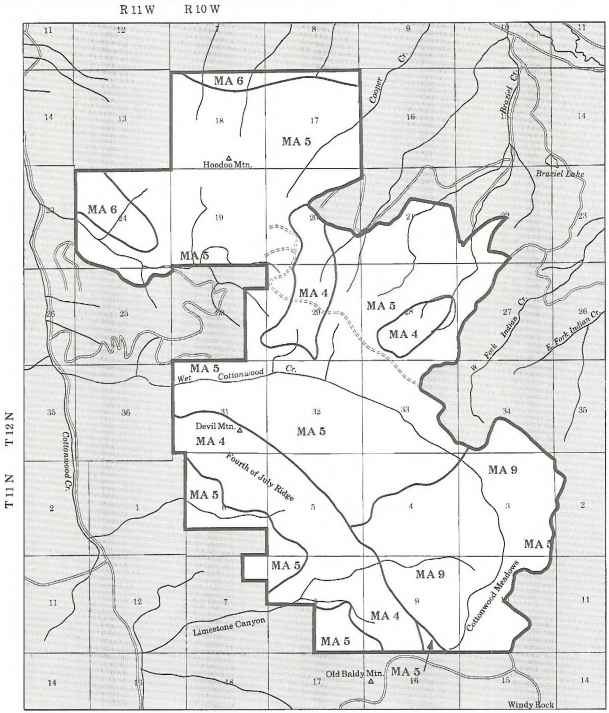
Under the guidelines pertaining to timber harvest on Management Areas 4, 5 and 6 the following restrictions are key mitigation measures:

* Cutting units would range in size from 20 to a maximum of 40 acres, and they would be irregular in shape;
* Cutting units would be spaced a minimum of 600 feet apart;

Loading Logs for Transportation to the Mill

* Buffer zones would be provided around big game habitat components such as wallows, mineral licks and foraging or resting sites;
* Timber management activities would be designed to maintain or improve big game winter range;
* Timber harvest would be designed to maintain or develop security habitat adjacent to natural forage areas;
* Winter recreation activities would be permitted where they do not conflict with wintering big game;
* Seasonal or yearlong closures of roads to motor vehicle use would be evaluated considering the sensitivity of big game habitat elements (winter range, elk summer/fall habitat components, big game summer/fall range, etc.) that would be affected .

Prescribed fire would be used on slopes greater than 40 percent to dispose of slash on logged sites and to prepare those sites for seedling reestablishment (see Fire Management Actions, for acres of slopes greater than 40 percent). Management Area guidelines prohibit using mechanized equipment



MA 4 Elk Summer/Fall Habitat Components

MA 5 Big Game Summer/Fall Range

MA 6 Big Game Winter Range

MA 9 Special Management Area

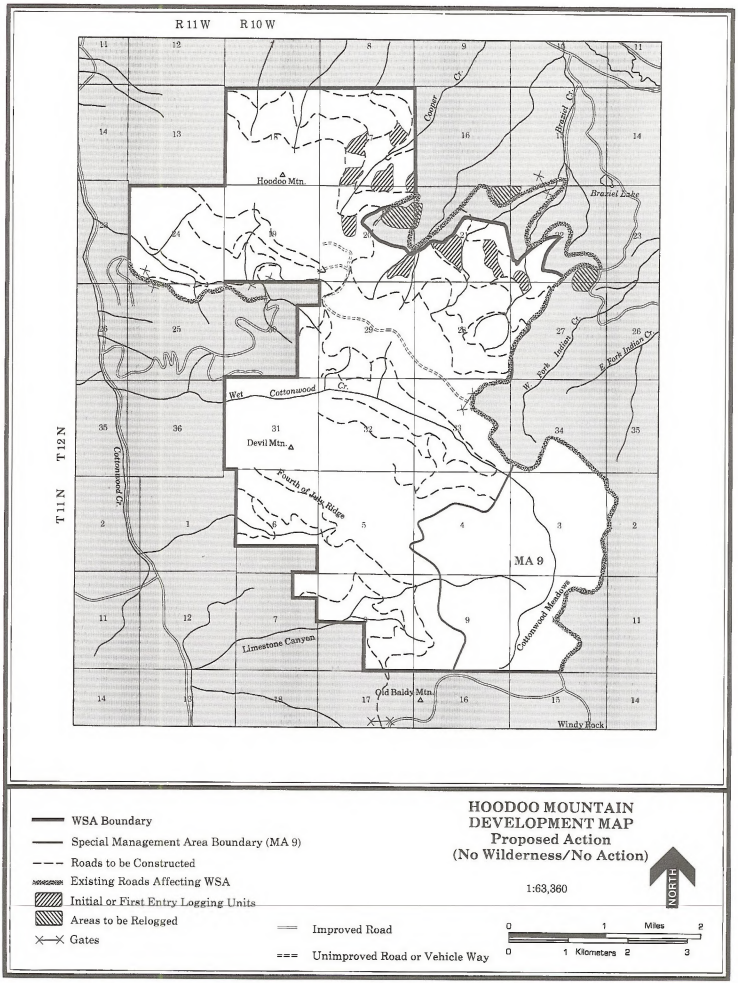
HOODOO MOUNTAIN MANAGEMENT AREAS
No Wilderness Alternative
(Proposed Action)

1:63,360

NORTH

0 1 Miles 2

0 1 Kilometers 2 3


R 11 W
R 10 W
T 12 N
T 11 N
Hoodoo Mtn.
Cooper Cr.
Brassel Cr.
Brassel Lake
W. Fork Indian Cr.
E. Fork Indian Cr.
Wet Cottonwood Cr.
Devil Mtn.
Fourth of July Ridge
Cottonwood Cr.
MA 9
Cottonwood Meadows
Limestone Canyon
Old Baldy Mtn.
Windy Rock
WSA Boundary
Special Management Area Boundary (MA 9)
Roads to be Constructed
Existing Roads Affecting WSA
Initial or First Entry Logging Units
Areas to be Relogged
Gates
Improved Road
Unimproved Road or Vehicle Way
HOODOO MOUNTAIN
DEVELOPMENT MAP
Proposed Action
(No Wilderness/No Action)
1:63,360
NORTH
0 1 Miles 2
0 1 Kilometers 2 3

on slopes greater than 40 percent; consequently, prescribed burning would be used to dispose of slash and prepare sites for seedling reestablishment. On slopes less than 40 percent, slash would be mechanically piled and burned.

Other mitigation measures that would be applied to timber harvest practices are described in the following appendices:

Management guidelines 5 - 20 for MA 4 and 5 - 17 for MAs 5 and 6 described in Appendix B;

Standards described under "Road System" and "Logging Practices" from Best Management Practices in Appendix C;

Recommendations from the Final Report of the Montana Cooperative Elk-Logging Study (Appendix D).

Minerals Management Actions

The entire WSA would be available for mineral exploration and development. The GEM (WGM Inc., 1983) characterized the potential for discovering metallic resources on the Hoodoo Mountain WSA as low to moderate, based on limited direct evidence. Any claims filed on the 1,700 acres in MA 9 (upper Wet Cottonwood Creek) would require a Plan of Operations. However, no claims are expected because of the requirement for a Plan of Operations and other limiting factors that include:

* low to moderate potential for the occurrence of metallic minerals;
* potential for developable deposits or profitable amounts occurring on the WSA is unknown;

Furthermore, two unpatented gold mining claims within the Braziel Creek drainage (T12N, R10W, Secs. 21 and 22) were abandoned (see Table 3-8 in Chapter 3). The claim in Section 21 was abandoned in 1988 and the one in Section 22 in 1985. Abandonment of those claims could be an indication of low development potential.

Little, if any, exploration is expected because of the low to moderate potential for occurrence of metallic minerals. If exploration should occur, no more than one operation is projected over the next 15 to 20 years. The methods used would be the same as those described under Minerals Management Actions for the Wales Creek Proposed Action. Based on experience and observation of current exploration activities in the vicinity of Wales Creek WSA, an estimated 3 acres of surface disturbance would be expected should minerals exploration take place.

No development is projected based on several factors, including abandonment of the Braziel Creek claims and a lack of historic production on the WSA. Also, the potential for finding developable deposits is currently unknown but could be slight based on the low to moderate potential for metallic minerals occurring on the WSA.

Energy (Oil and Gas) Management Actions

The entire WSA would be available for oil and gas leasing and exploration. Before 1988, 1,300 acres of the WSA were under post-FLPMA leases. These have all been closed since March 29,1988 (see Table 3-9 in Chapter 3).

The GEM (WGM Inc., 1983) indicates a low to moderate potential for occurrence of oil and gas resources. Furthermore, there is a low probability of discovering marketable quantities/qualities of oil and gas. For the foreseeable future, no exploration and development would be expected because of resource potential and economic factors. Factors that influenced a prediction of little, if any, exploration and no development on Wales Creek WSA would apply as well on Hoodoo Mountain WSA:

* low development potential;
* little historic oil and gas activity;
* low industry demand;
* high cost of developing a wildcat well;
* low return in price per barrel of oil on investments in exploration and development;
* rugged terrain;
* surface occupancy restrictions, seasonal closures, and other management stipulations to oil and gas activities.

Wildlife Habitat Management Actions

Approximately 1,700 acres of wet meadows and important elk habitat in upper Wet Cottonwood Creek would be allocated to special management direction (see MA 9 objectives and guidelines, Appendix B). Important forage areas and security habitat for elk would be protected under the special management designation. Hoodoo Mountain WSA is predominantly forested, providing a large block of security area for elk and deer. The wet meadows distributed along Wet Cottonwood Creek are an important habitat type for elk. The largest of these, Cottonwood Meadow, and several others are included in the 1,700-acre special management area (MA 9). Generally, the area is closed or restricted to management activities that would conflict with the objectives for MA 9. Motor vehicle use by the general public is currently precluded from the WSA, and MA 9 would remain closed to motor vehicles

(except for administrative use). Snowmobile use would be considered from December through April in locations that are consistent with management guidelines. However, no designated trails would be developed, and currently there appears to be limited interest in the area by snowmobilers.

Prior to WSA classification, 4 miles of fence were installed to preclude livestock grazing from the wet meadows of upper Wet Cottonwood Creek. Exclusion of grazing was implemented to protect and preserve prime elk forage values, riparian values and downstream fishery values. Exclusion of grazing is expected to continue.

Cutting and prescribed burning of wet meadows to retard conifer encroachment and maintain key elk forage areas is a proposed habitat enhancement project. Treatment of wet meadows along Wet Cottonwood Creek would ultimately affect an estimated maximum of 100 acres (located in both MAs 5 and 9).

Wet Meadow on Wet Cottonwood Creek

Management emphasis for the remaining 9,680 acres of the WSA would be to provide big game forage, cover and travel components interspersed within and adjacent to security habitat. Management direction would comply with the objectives and guidelines described for MAs 4, 5 and 6 in Appendix B. In general, the key management emphases are summarized as follows:

* Resource management actions would be oriented toward providing forage, cover and travel components interspersed within and adjacent to security areas for big game;
* Timber cutting units would provide openings for increasing big game forage. They would be limited in size to 40 acres and would be irregular in shape;
* Existing vehicle ways would remain closed to retain the area for walk-in hunting;
* Timber sale contracts would be limited to three years or less;
* Logging roads would be open for logging operations for 2 to 3 years and then evaluated for motor-vehicle use by the general public;
* There would be no less than 600 feet distance between cutting units and additional entries would occur at intervals of at least 5 to 10 years allowing planting and regrowth in logged areas.

Recreation Management Actions

Motor Vehicle Use

Boundary roads would remain open to general motor vehicle use unless specifically closed by the ORV and road management plan. That plan has been completed and is available at the Garnet RAH (Implementation Plan and EA for ORV Designations, EA number MT 074-06-05, July 1986, 42 pages). The WSA itself would continue to be closed to offroad vehicle use unless administratively determined otherwise. Currently there is no motor vehicle access within the WSA, but access is afforded by Hoodoo Mountain Jeep Road (along the eastern boundary) and, with seasonal exceptions, by a logging spur road adjacent to the northern boundary. Management Area 9 would remain closed to motorized vehicle use. Future motor vehicle use of MAs 4, 5 and 6 would be restricted to roads and trails designated as open. New roads constructed for timber harvest would be open to logging operations for 2 to 3 years and then evaluated for public use (see guidelines in Appendix B). Current use of Hoodoo Mountain Jeep Road that is assumed to be associated with the WSA is estimated at 200 visitor days/year (90 percent hunting use and 10 percent other).

Snowmobile Use

The entire WSA would be open to snowmobile use. The Hoodoo Mountain WSA has no designated trail system such as that associated with the Wales Creek WSA. Current use of the Hoodoo Mountain area is 115 snowmobile visitor days/year. Most of that use (100 visitor days/year) is assumed to occur on the Hoodoo Mountain Jeep Road and the Indian Creek Road, which are adjacent to the WSA boundary. Within the WSA use of Gobbler Knob Vehicle Way is estimated at 15 percent of that on the Hoodoo Mountain Jeep Road or 15 visitor days/year. Timber harvest would provide openings that could significantly increase the potential for snowmobile use.

Hiking

The WSA would be managed for walk-in hunting only. Ninety percent (approximately 165 hunter days/year) of the current hunting use is assumed to be walk-in. The remaining 10 percent is assumed to be hunting from the boundary roads. Remnants of old BFPA and livestock herding trails are still relatively well defined by blazed trees and visible tread in the Cottonwood Meadow/Fourth of July Ridge/Wet Cottonwood Creek area (see Hoodoo Mountain Land Status Map, Chapter 1). Those segments comprise approximately 5 - 6 miles of recognizable trail (other than game trails) in the WSA. Signs of use suggest that as high as 50 percent (nearly 85 hunter days/year) of the estimated walk-in hunting is associated with the trail segments. Use appears to be particularly high on trail segments in the Cottonwood Meadow/Fourth of July Ridge area. Provided that funding and labor are made available, trail segments would be connected to develop a trail system that includes the WSA as well as trail segments discovered in Gallagher Creek drainage and the area south of Gallagher Creek. Funding and labor would also be needed to maintain a developed trail system.

Snowmobile Use Could Be Enhanced Through Timber Harvest

Primitive Camping

Present camping activity is almost exclusively associated with hunting and may constitute an estimated 20 percent (nearly 35 visitor days/year) of the current hunting use occurring on the WSA. Existing levels of primitive camping are projected to continue as there would be no sites developed with this alternative.

Developed Recreation

No major recreational facilities, such as campgrounds, would be developed in the WSA in order to keep the emphasis on wildlife habitat management. Recreation use would be oriented more toward providing primitive, back-country types of opportunities.

Fire Management Actions

On the 1,700-acre upper Wet Cottonwood Creek drainage (MA 9) restrictions to wildfire suppression would include construction by hand or backfire of fire lines and no use of ground-disturbing, mechanized equipment. Full fire suppression would be practiced on approximately 9,365 acres outside of the special management area (excludes 315 acres of riparian). Fire suppression would utilize both ground and air support, including mechanized, ground disturbing equipment.

Prescribed fire would be used on slopes greater than 40 percent (approximately 3,800 acres) in the 9,680-acre multiple-use portion of the WSA to reduce slash on cutting units and prepare cutover sites for seedling establishment.

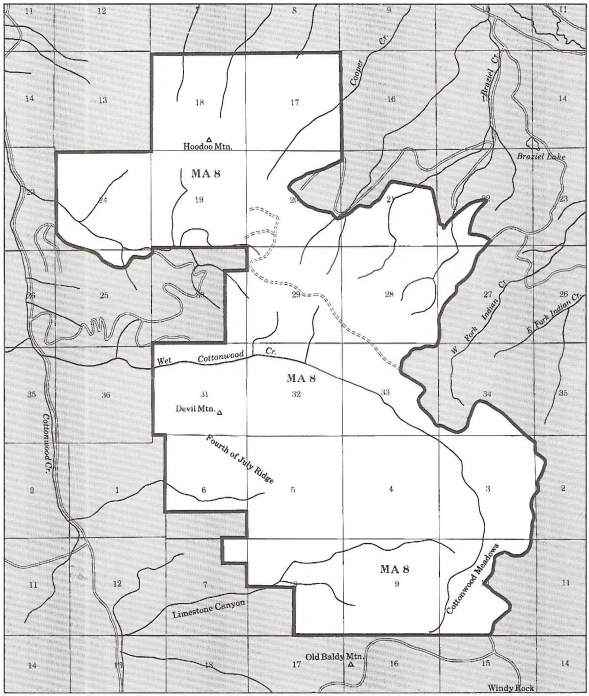
Realty Management Actions

Approximately 3,800 acres (1,700 acres of MA 9 and 2,100 acres of MA 4) would be allocated as corridor avoidance areas. The remaining 7,200 acres of big game summer/fall habitat (MA 5) and 380 acres of big game winter range (MA 6) would be available for establishing utility rights-of-way (ROWs) consistent with management area objectives and guidelines (see Appendix B).

No ROWs corridors are expected because of unsuitable terrain, and the utility industry has not identified any potential corridors in the WSA. The Western Utility Group Corridor Study of 1986 did not identify any potential corridors in or near the WSA.

All Wilderness Alternative

All of the 11,380-acre Hoodoo Mountain WSA would be recommended for wilderness designation (see Hoodoo Mountain Wilderness Area Map - All Wilderness Alternative). This alternative emphasizes preservation of wilderness values over multiple-use management. A description of management actions for each of the issues follows.



WSA Proposed Wilderness Boundary

MA 8 Area Recommended for Wilderness Designation

HOODOO MOUNTAIN MANAGEMENT AREAS
All Wilderness Alternative

1:63,360

NORTH

0 1 Miles 2

0 1 Kilometers 2 3

Wilderness Management Actions

The entire WSA would be managed to preserve the existing naturalness, solitude and primitive recreation opportunities.

Wilderness Qualities of Hoodoo Mountain WSA

Timber Management Actions

None of the nearly 9,000 acres of commercial forest land would be managed for timber production. The potential harvest averaging 635 mbf/year would not be available, and an estimated harvest averaging 430 mbf/year under the Proposed Action would be foregone under this alternative.

Minerals Management Actions

The entire WSA would be withdrawn from mineral entry. Wilderness designation closes the area to location of future mining claims and mineral development under current laws. There are no existing claims on the WSA; consequently, there is nothing to go forward for consideration under 43 CFR 8560.4-6 regulations. Even without wilderness designation, the likelihood for development of metallic minerals would be low. The factors that support such a prediction are listed under Minerals Management Actions for the Proposed Action Alternative.

Energy Oil and Gas Management Actions

The entire WSA would be closed to further oil and gas leasing.

Oil and gas exploration and development would be unlikely even without wilderness designation. Low economic return on investment in exploration and development and predicted low development potential are among the factors that would support such a prediction.

Wildlife Habitat Management Actions

Management direction would be to let nature determine habitat qualities and patterns. Because of emphasis on a natural environment, management options would be limited. Under this alternative, habitat manipulations would be primarily the result of natural phenomena such as fire, disease, tree blowdown, etc.

Habitat improvement on approximately 100 acres of wet meadows along Wet Cottonwood Creek would no longer be a potential project (see Wildlife Habitat Management Actions for the Proposed Action). Implementation of such a project would require the use of mechanical equipment that would not be allowed on wilderness areas. The area would continue to provide security habitat and naturally occurring habitat components.

Recreation Management Actions

The area would be managed to provide a primitive setting and nonmotorized recreational pursuits. Natural values would be preserved and protected and recreation use would be oriented toward primitive types of opportunities.

Motor Vehicle Use

The WSA would be closed to motorized vehicle use. Since wilderness designation would not preclude the use of roads adjacent to the WSA, the 200 visitor days/year estimated for Hoodoo Mountain Jeep Road would continue. Therefore, the 180 visitor days assumed as hunting use of the WSA would also be likely to continue.

Snowmobile Use

The area would be closed to snowmobiles. Use of adjacent roads would probably not change from that described in the Proposed Action (estimated at 100 visitor days/year). Current snowmobile use and new opportunities resulting from timber harvest (see Recreation Management Actions for the Proposed Action) would not occur under this alternative

Hiking

The current level of walk-in hunting would probably continue at an estimated 165 hunter days/year.

A 14-mile trail system would be developed to access the proposed wilderness area. Remnants of BFPA and livestock herding trails would comprise about 5 to 6 miles of the system with new construction necessary to provide the remaining 8 to

9 miles. A developed trail system and wilderness designation would enhance the hiking potential of the WSA.

Minimal parking facilities (described under Recreation Management Actions, Wales Creek All Wilderness Alternative) would be developed at three trailheads - one on the West Fork Braziel Creek Road, one at or near the junction of Hoodoo Mountain Jeep Road and Gobbler Knob Vehicle Way, and one along the Hoodoo Mountain Jeep Road near Cottonwood Meadows. These trailheads would serve as access points to the 14-mile trail system.

The Hoodoo Mountain Development Map - All Wilderness Alternative shows the locations of trails and road closure gates.

Primitive Camping

There are no designated camping sites on the WSA, and it is unlikely that any will be developed unless a need is determined. Camping associated with hunting would be expected to remain at approximately 20 percent of that use.

Fire Management Actions

Same as Fire Management Actions for the Wales Creek All Wilderness Alternative.

Realty Management Actions

Same as the Realty Management Actions for the Wales Creek All Wilderness Alternative.

Partial Wilderness Alternative

This alternative recommends wilderness designation for approximately 5,870 acres in the Wet Cottonwood Creek drainage (MA 8 on the Hoodoo Mountain Management Areas Map - Partial Wilderness Alternative Map). and further recommended uses other than wilderness on the remaining 5,510 acres of the WSA.

The part of the WSA recommended for wilderness would be managed to preserve and/or enhance existing wilderness values. The portion of the WSA not recommended for wilderness would be essentially managed as big game habitats - elk summer/fall habitat components (MA 4), big game summer/fall habitat (MA 5) and big game winter range (MA 6). Locations for the three management areas are shown on the Hoodoo Mountain Management Areas Map - Partial Wilderness Alternative, and the management goals and guidelines are described in Appendix B. Management Area 4 comprises approximately 2,600 acres in Braziel Creek, West Fork Braziel Creek and Cooper Creek drainages. Management Area 5 comprises approximately 2,707 acres generally located in the middle portion of Cooper Creek and southwest of the Fourth of July Ridge. Management Area 6 is a band of approximately 200 acres generally located along the northern boundary of the WSA.

Following are descriptions of management actions for each of the issues.

Wilderness Management Actions

The wilderness values of solitude, naturalness and primitive recreation opportunities would be preserved on the 5,870 acres of Wet Cottonwood Creek drainage.

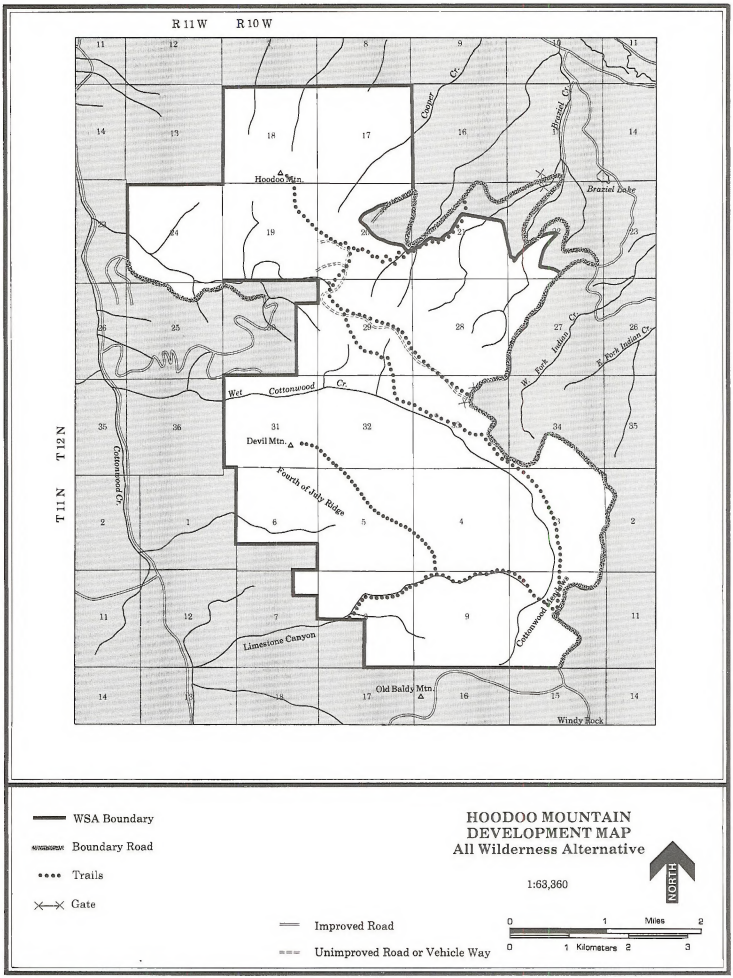
Timber Management Actions

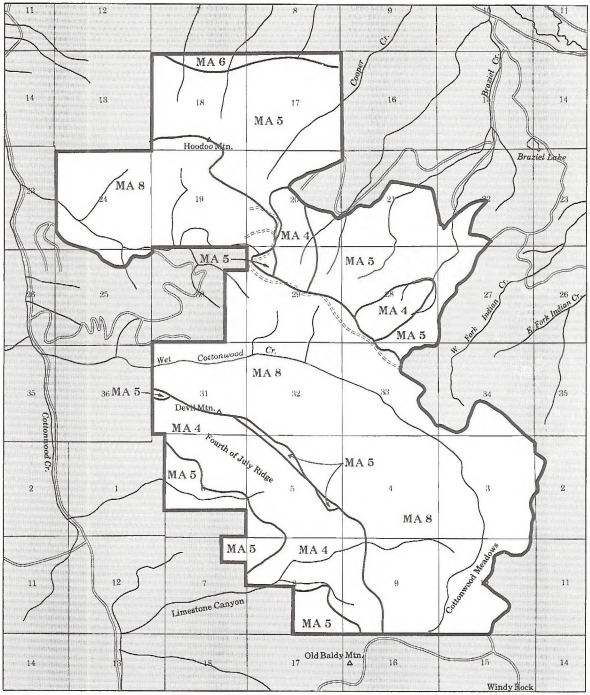
Wilderness designation for the Wet Cottonwood Creek drainage would withdraw approximately 4,500 acres of CFL from commercial timber production. A potential harvest averaging approximately 320 mbf annually would no longer be available.

Approximately 4,500 acres of CFL in the Braziel, Lost and Hall Creek drainages would be available for timber management. Timber harvest would be managed according to the goals and guidelines for Management Areas 4, 5 and 6 which emphasize wildlife habitat management (see Appendix B for management guidelines). The available CFL would have a potential harvest averaging approximately 315 mbf annually. Habitat management restrictions would reduce that potential by about 20 percent to approximately 250 mbf, average annual cut. A harvest of 250 mbf represents about 3.5 percent of the annual allowable cut for the Resource Area.

Development would be the same as that discussed under Timber Management Actions for the Proposed Action, except for the description of full development. Full development would require the construction of 26.5 miles of road with approximately five miles of road constructed under each entry. Locations of proposed roads and initial entry cutting units are shown on the Hoodoo Mountain Development Map - Partial Wilderness Alternative.

Mitigation measures that would be applied to timber harvesting practices are the same as those described under the Proposed Action.


R 11 W
R 10 W
T 12 N
T 11 N
Hoodoo Mtn.
Devil Mtn.
Wet Cottonwood Cr.
Fourth of July Ridge
Limestone Canyon
Old Baldy Mtn.
Windy Rock
Cottonwood Cr.
Cottonwood Mountain
Cooper Cr.
Braziel Cr.
Braziel Lake
W. Fork Indian Cr.
E. Fork Indian Cr.
WSA Boundary
Boundary Road
Trails
Gate
Improved Road
Unimproved Road or Vehicle Way
HOODOO MOUNTAIN
DEVELOPMENT MAP
All Wilderness Alternative
1:63,360
NORTH
0 1 Miles 2
0 1 Kilometers 2 3



MA 4 Elk Summer/Fall Habitat Components

MA 5 Big Game Summer/Fall Range

MA 6 Big Game Winter Range

MA 8 Area Recommended for Wilderness Designation

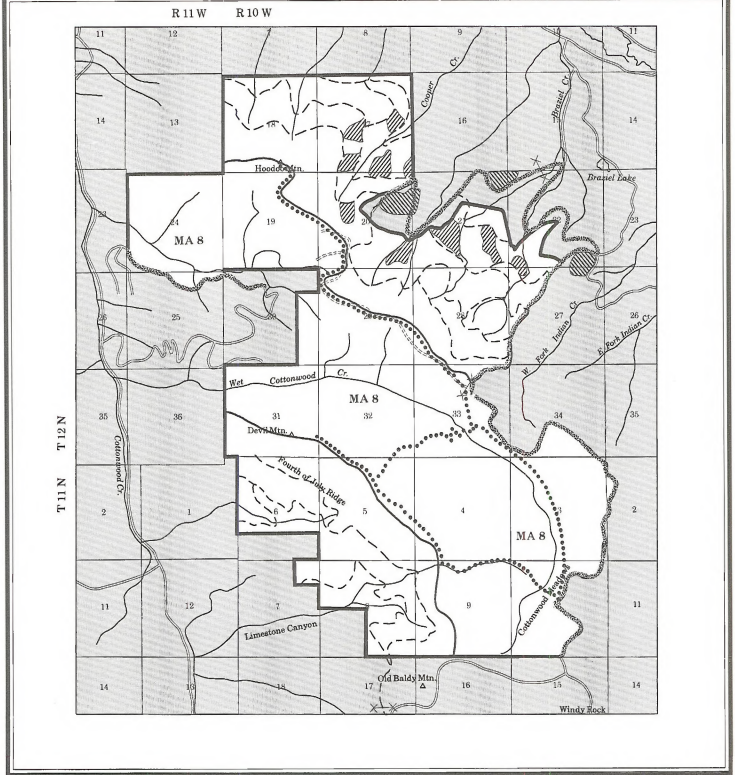
HOODOO MOUNTAIN MANAGEMENT AREAS
Partial Wilderness Alternative

1:63,360

NORTH

0 1 Miles 2

0 1 Kilometers 2 3


R 11 W
R 10 W
T 12 N
T 11 N
Hoodoo Mtn.
MA 8
Wet Cottonwood Cr.
Devil Mtn.
Fourth of July Ridge
Cottonwood Cr.
Limestone Canyon
Old Baldy Mtn.
Windy Rock
Brazel Lake
W. Fork Indian Cr.
E. Fork Indian Cr.
Cottonwood Cr.
WSA Boundary
Partial Wilderness Boundary (MA 8)
Roads to be Constructed
Existing Roads Affecting WSA
Trails
Initial or First Entry Logging Units
Areas to be Relogged
Improved Road
Unimproved Road or Vehicle Way
HOODOO MOUNTAIN
DEVELOPMENT MAP
Partial Wilderness Alternative
1:63,360
NORTH
Miles
Kilometers

Prescribed fire would be used in conjunction with timber management as described under the Proposed Action.

Minerals Management Actions

The 5,870 acres in the Wet Cottonwood Creek drainage would be withdrawn from mineral entry. Wilderness designation closes the area to location of future mining claims and mineral development under current laws.

The remainder of the WSA (5,510 acres) would be open to the exploration and development of minerals. Locatable minerals activities would be governed by 43 CFR 3809 regulations and would be consistent with the management goals and guidelines for MAs 4, 5 and 6 (see Appendix B). Exploration and development for metallic minerals are unlikely because of a low to moderate potential for occurrence and a questionable potential for discovering developable deposits. If exploration does occur, the expected level is the same as described under the Proposed Action.

Energy (Oil and Gas) Management Actions

The 5,870 acres in the Wet Cottonwood Creek drainage would be withdrawn from leasing.

The remainder of the WSA would be open to leasing, exploration, and development. Exploration and development are unlikely, primarily because of low to moderate potential for occurrence of oil and gas, a suspected low development potential, and unfavorable economic factors. Other factors that support an unlikely expectation of exploration and development are described under Energy Management Actions for the Proposed Action.

Wildlife Habitat Management Actions

The management of 5,870 acres as wilderness would provide a mixture of security habitat, forage, cover and travel components in the Wet Cottonwood Creek drainage. Here natural processes would determine habitat patterns and qualities.

Management of the 5,510 acres allocated for multiple-use would emphasize providing forage, cover and travel components interspersed within and adjacent to the existing security areas. The guidelines for Management Areas 4, 5 and 6 would be followed (see Appendix B).

Management guidelines applied to the 5,510 acres are the same as those identified under the Wildlife Habitat Management Actions for the Proposed Action.

Recreation Management Actions

Motor Vehicle Use

The 5,870-acre area proposed for wilderness would be closed to motor vehicles, but since the WSA is currently closed, the existing situation would not be changed. Motor vehicle use of Hoodoo Mountain Jeep Road would likely continue at the current level, estimated at 200 visitor days/year. Future use of MAs 4, 5 and 6 would be restricted to open roads and trails. The WSA would continue to attract hunters and would be available for walk-in hunting (current use is estimated at 165 hunter days/year).

Access into the 5,510-acre area not recommended for wilderness would be established through timber harvest activities. Haul roads would be open for 2 to 3 years for logging operations and then evaluated for public use.

Snowmobile Use

Snowmobile use of adjacent roads would probably continue at the current estimated level of use (100 visitor days/year). Gobbler Knob Vehicle Way would be closed to snowmobiles since it would be within the proposed wilderness area (estimated use is 15 visitor days/year). On the 5,510-acre area not recommended for wilderness, the potential for snowmobile use would be improved through timber harvest (see Snowmobile Use under the Proposed Action).

Snowmobiling - One of the Major Recreation Uses of the Hoodoo Mountain Area

Hiking

The WSA would remain part of a walk-in hunting area; consequently walking would continue as the primary means of hunting access to the area (current use estimated at 165 hunter days/year). Wilderness designation and an 11-mile trail system are proposed for 5,870 acres of the Wet Cottonwood Creek drainage. Minimal parking facilities (see Recreation Management Actions, Wales Creek All Wilderness Alternative) would be developed at trailheads located along the Hoodoo Mountain Jeep Road near Cottonwood Meadow and near the junction of the Hoodoo Mountain Jeep Road and the Gobblers Knob Vehicle Way. The trailheads would serve as access points to the 11-mile trail system in the proposed wilderness area.

The Hoodoo Mountain Development Map - Partial Wilderness Alternative shows the locations of trails and road closure gates.

Primitive Camping

Wilderness designation for the Wet Cottonwood Creek drainage in conjunction with an 11-miles trail system that would be developed would attract additional camping use to the WSA.

Camping associated with hunting would be predicted to occur at the same percentage of that use as assumed for the Proposed Action (see Primitive Camping for the Proposed Action).

Fire Management Actions

Limited fire suppression would be applied in the area proposed for wilderness (5,870 acres in the Wet Cottonwood Creek drainage). Restrictions would be the same as described under the Fire Management Actions for the Wales Creek All Wilderness Alternative. Aggressive initial attack would be with aircraft and hand crews.

Full fire suppression would be applied to approximately 5,180 acres outside of the proposed wilderness area and exclusive of riparian areas. Fire suppression includes the use of aircraft and ground-disturbing, mechanized equipment. Riparian areas outside the proposed wilderness area would receive limited fire suppression (excludes the use of ground-disturbing, mechanized equipment except to prevent the loss of human life or to protect high value property).

Prescribed fire would be used on slopes greater than 40 percent (approximately 1,900 acres) to prepare sites for seedling establishment, reduce slash, and improve forage composition.

Realty Management Actions

The 5,870 acres proposed for wilderness would be unavailable for utility rights-of-way with the remaining 5,510 acres open to utility routing. However, no rights-of-way are expected through the WSA, because the Western Utility Group did not identify any potential corridors in or near the WSA in its 1986 corridor study.

DESCRIPTION OF THE ALTERNATIVES FOR QUIGG WEST WSA

Proposed Action (All Wilderness) Alternative

All of the 520-acre Quigg West WSA would be recommended for wilderness designation. This alternative emphasizes statutory preservation of the identified wilderness values. Because of its small size, this WSA is only recommended for wilderness as a tack-on to the Forest Service Quigg (Slide Rock) RARE II area. If the Forest Service area were designated wilderness, the WSA would be included in the designation.

Location of the WSA is shown on the Quigg West Alternatives Map. A description of management actions for each of the issues follows.

Wilderness Management Actions

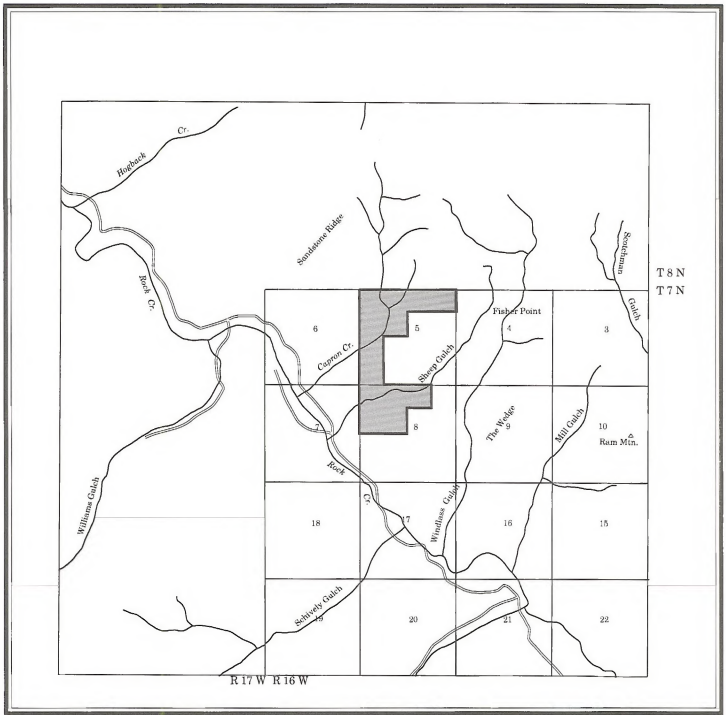
Management activities would be directed at maintaining the wilderness values of solitude, naturalness and opportunities for primitive recreation via statutory designation.

Timber Management Actions

The 284 acres of Commercial Forest Land would not be managed for timber production. Management of the timber resource would be aimed at retaining the primeval character of the environment and allowing natural ecological processes to operate freely.

Minerals Management Actions

All of the lands would be withdrawn from mineral entry. There are no existing unpatented mining claims on the WSA.



WSA Boundary

Proposed Wilderness Alternative — entire area recommended for wilderness designation

No Wilderness Alternative — no portion recommended for wilderness designation

QUIGG WEST ALTERNATIVES

NORTH

0 1 2 Miles

0 1 2 3 Kilometers

1:63,360

Energy (Oil and Gas) Management Actions

The WSA would be closed to further leasing. Prior to 1986, approximately 200 acres were covered by a post-FLPMA lease. That lease was closed 04/07/86.

Wildlife Habitat Management Actions

There are no wildlife management habitat actions proposed. Habitat management direction would be to allow natural processes to determine the quality and pattern of wildlife habitat.

Recreation Management Actions

The land would be managed to provide a primitive setting and to allow nonmotorized recreational pursuits. No public access would be obtained. Developments (trails, trailhead parking, etc.) would be determined in conjunction with Forest Service planning for Quigg RARE II area, contingent on it being designated wilderness.

Fire Management Actions

Since Quigg West WSA is a tack-on to the Forest Service Quigg RARE II Study Area, fire suppression and fire management activities would be coordinated with Forest Service policies, objectives and guidelines. Neither cross-country vehicle travel nor use of ground-disturbing, mechanized equipment would be allowed except to prevent loss of human life or to protect high-value property.

Realty Management Actions

The land would be unavailable for utility rights-of-way. None, however, are projected.

Since the WSA is in a retention area, none of the lands would be available for disposal. There would be no easement acquisition. Quigg West is a tack-on to the Forest Service Quigg RARE II area and the public would have legal access from the north and west.

No Wilderness Alternative

None of the 520-acre Quigg West WSA would be recommended for wilderness designation. This alternative emphasizes preservation of resource values by administrative procedure, designating the WSA as a special management area (MA 9 - see Appendix B for management goals and guidelines).

A description of management actions for each of the issues follows.

Wilderness Management Actions

There would be no wilderness management actions.

Timber Management Actions

The 284 acres of CFL were administratively set aside from timber harvest through the Garnet RMP/EIS. Furthermore it would be impractical to manage the area for timber production because of poor accessibility and rugged terrain and the expense that would be necessary to develop these isolated timber stands. Short-term management of the timber resource would be aimed at retaining the primeval character of the environment and allowing natural ecological processes to operate freely.

Minerals Management Actions

The lands would be open to the exploration and development of the mineral resources. There is a moderate potential for finding minerals, primarily gold; however, the possibility of finding quantities sufficient to warrant development is considered low. Little historic use, a suspected low potential for developable deposits, cost of developing a claim and remoteness and ruggeddness support a prediction of little (if any) development and exploration. Should a claim be located, a Plan of Operations would be required, and a validity exam would be processed. However, claims filings are not expected based on the factors above that were used to predict no development or exploration.

Energy (Oil and Gas) Management Actions

Leasing for oil and gas resources would be allowed, but under a no surface occupancy stipulation. There is a moderate potential for finding oil and gas but a low possibility for developable quantities being discovered. Consequently, future exploration and leasing in the WSA are not likely. Other factors that contribute to an expectation of no future leasing include no surface occupancy, ruggedness of the WSA, and an unfavorable cost/benefit ratio (ie., costs of development are likely to exceed returns per barrel of oil).

Wildlife Habitat Management Actions

There are no wildlife habitat management actions proposed. Natural processes would be allowed to determine the quality and patterns of wildlife habitat.

Recreation Management Actions

The land would be managed to provide a primitive setting and to allow nonmotorized recreational pursuits. No public access would be obtained and no facilities would be constructed (including trails).

Fire Management Actions

Fire management would be restricted to the use of fixed wing aircraft, helicopters, and on the ground personnel. Cross country vehicles and mechanized equipment will only be utilized to prevent loss of life or to protect personal property. Prescribed fire would not be used.

Realty Management Actions

The lands would be managed as an area to be avoided by utility rights-of-way. There are no proposals to develop utility corridors in the WSA.

Since the WSA is in a retention area, none of the lands would be available for disposal. There would be no easement acquisition. Quigg West is a tack-on to the Forest Service Quigg RARE II area and the public would have legal access from the north and the west.

TABLE 2-3a

SUMMARY OF IMPACTS — WALES CREEK WSA

Issues	Alternatives: Proposed Action (No Wilderness/No Action)	Alternatives: All Wilderness	Alternatives: Partial Wilderness
Wilderness Values	Motor vehicles, snowmobiles, timber harvest, and mining activities could impact the solitude of the 11,580 acres if all activities were operating simultaneously and spatially positioned for the broadest impact. However, noise from all activities would be intermittent rather than continuous. Motor vehicle use would be relatively light and seasonal (heaviest during hunting season). Snowmobile use, logging, and mining activities would also be relatively light and seasonal. The 5- to 10-year intervals between timber harvest entries would further mitigate worst case effects on solitude. Visual intrusions of roads and logging could impact the perception of naturalness on an estimated 665 acres of the Wales Creek Special Management Area (MA 9). Treatment of wet meadows on Wales Creek would diminish natural values on an additional 100 acres. Roads, logging, and mining would impact natural values and the perception of naturalness on an estimated 1,638 acres of the area allocated by the RMP for multiple resource management. Supplemental values would be protected on 4,900 acres. Treatment of wet meadows would influence increases in elk and deer by as much as 5 percent of the total projected increase. Opportunities for primitive and unconfined recreation would be impacted by the sights and sounds of motor vehicles, snowmobiles, timber harvest, and mining activities. Impacts would be similar to those described for solitude and naturalness.	The sounds associated with motor vehicles, snowmobiles, and projected mining could impact essentially all of the 11,580 acres. Motor vehicle and snowmobile impacts would be from those uses occurring adjacent to the proposed wilderness area. Those sounds would be intermittent and relatively light, thereby minimizing the actual impacts. Noise associated with the two mines projected for development would impact the solitude of the proposed wilderness. Logging of timber sales located adjacent to the proposed wilderness boundary would also impact the solitude of the area. When resource management activities are halted, opportunities for solitude would be reestablished. Visual intrusion of boundary and cherry-stemmed roads and mining would impact the perception of naturalness on an estimated 890 acres of the proposed wilderness area. Roads and other disturbances would also impact the perception of naturalness on an estimated 800 acres of vistas within the proposed wilderness area. Special features (mineral licks, warm water springs, etc.) would be preserved under this alternative. Moose numbers are expected to decline, with elk and deer generally remaining at or near current levels because habitat manipulations would depend on natural processes. Opportunities for primitive and unconfined recreation would be impacted similar to that described for solitude and naturalness.	Solitude, naturalness, and opportunities for primitive recreation would be substantially affected by the existence and uses of boundary and cherry-stemmed roads, by timber harvest and by mining activities. Impacts would be expected to be similar to those described under the Proposed Action. Supplemental values would be maintained on 4,900 acres. Moose and beaver would be adversely affected by not treating 100 acres of wet meadows on Wales Creek. Increases in elk and deer numbers would be a little less than under the Proposed Action.

TABLE 2-3a (continued)

SUMMARY OF IMPACTS — WALES CREEK WSA

Issues	Alternatives		
	Proposed Action (No Wilderness/No Action)	All Wilderness	Partial Wilderness
Timber Harvest	There would be no impact on timber harvest as established through the land use plan (Garnet RMP/EIS).	An annual harvest averaging 400 mbf would be lost.	Same as Proposed Action.
Minerals	There would be no impact.	Two of 28 existing mine claims are projected to be developed. Total area that would be impacted is estimated at 10 acres. The remainder of the area would be unavailable for exploration and development.	There would be no impact on developing the mineral resources of the WSA. However, the opportunity to explore and develop within the Wales Creek drainage would be foregone due to withdrawal from mineral entry.
Energy	There would be no impact.	The opportunity to explore and develop oil and gas resources would be foregone on lands withdrawn from leasing. However, the impact of no exploration or development is projected as low because of the assumed low potential for developable amounts of oil and gas.	Same as Proposed Action.
Wildlife	Moose numbers would remain at about current levels. Elk are expected to increase by 30 percent, and deer by 25 percent. The potential for beaver to reestablish on Wales Creek would be improved.	The area would provide a larger block of security habitat. Because habitat management would depend upon natural processes, moose numbers could decline, perhaps as much as 1/2. Elk and deer would remain at or near current but would fluctuate with habitat conditions governed by natural processes. The potential for beaver reestablishing on Wales Creek would decline with a continuing deterioration of the willow component on wet meadows.	Moose numbers are expected to decline, perhaps as much as 1/2, attributed primarily to no treatment of wet meadows. Elk are projected to increase by 27 percent, and deer by 22 percent. The potential for beaver reestablishment is the same as the All Wilderness Alternative.
Recreation	Hunting use is expected to increase by 50 visitor days/year because of increases in elk and deer.	No increase in hunting use is expected and could decline if big game numbers dropped in response to declining habitat condition.	Moose hunting would decline because of reduced numbers. However, hunting use is projected to increase by 40 visitor days/year because of increases in elk and deer.

TABLE 2-3a (continued)

SUMMARY OF IMPACTS — WALES CREEK WSA

Issues	Alternatives		
	Proposed Action (No Wilderness/No Action)	All Wilderness	Partial Wilderness
	Snowmobile use is expected to increase by 150 visitor days/year in response to logging operations. Increased hiking use is projected at 50 visitor days/year as a result of developing a foot trail system. Total recreation use is projected to increase by 250 visitor days/year, from 430 visitor days to 680.	There would be no snowmobile use on the proposed wilderness area. An increase of 150 visitor days/year is projected due to wilderness designation and development of a foot trail system. The increase represents a dispersal of use from nearby, heavily-used wilderness areas. Total recreation use is projected at 570 visitor days/year.	Snowmobile use would increase on the Yourname Creek area by 150 visitor days/year in response to logging operations. An increase of 70 visitor days/year is projected as the result of wilderness designation and development of a foot trail system. Total recreation use is projected at 690 visitor days/year.
Economics	Timber management would provide 4 jobs ($100,000 in salaries) to the local economy, and $20,000 annually to the U.S. Treasury. Increased recreation use would be valued at $7,500 annually. Total recreation use would be valued at $20,400 annually. There would be no impact to local and regional economies resulting from the increase in recreation use because that use is projected to be a dispersal of users from nearby areas rather than new use.	Losses of 4 jobs ($100,000 in salaries) and $20,000 to the U.S. Treasury would result from withdrawing the area from timber production. Increased recreation use would be valued at $4,500 annually. Total recreation use would be valued at $17,100 annually. There would be no impact to local and regional economies resulting from the increase in recreation use because that use is projected to be a dispersal of users from nearby areas rather than new use.	Benefits to the local economy and to the U.S. Treasury from timber production would be the same as with the Proposed Action. Increased recreation use would be valued at $7,800 annually. Total recreation use would be valued at $20,700 annually. There would be no impact to local and regional economies resulting from the increase in recreation use because that use is projected to be a dispersal of users from nearby areas rather than new use.
Fire	Limited fire suppression would be applied to 5,180 acres. Full fire suppression would be authorized on 6,400 acres. Prescribed burning would be used for wildlife habitat improvement and on about half of the cutting units (approximately 200 acres) to dispose of slash and prepare the sites for seedling reestablishment.	Only limited fire suppression (no motorized ground equipment) would be authorized over the entire. Prescribed burning would not be allowed.	Impacts would be similar to those described for the Proposed Action.

TABLE 2-3b

SUMMARY OF IMPACTS — HOODOO MOUNTAIN WSA

Issues	Alternatives		
	Proposed Action (No Wilderness/No Action)	All Wilderness	Partial Wilderness
Wilderness Values	At worst case, the solitude of the entire 11,380-acre WSA could be impacted by motor vehicles, snowmobiles, timber harvest, and minerals exploration. This assumes all sources of noise operating simultaneously and spatially located to produce the broadest impact. Actually, all sources of noise would be operating intermittently rather than continuously. Motor vehicle use would be relatively light and seasonal (primarily during hunting season). Snowmobile use would be seasonal, occurring when other uses were low. Logging would be seasonal, and the 5- to 10-year interval between harvest entries would mitigate worst case effects. Timber harvest (primarily), roads, and mineral exploration would impact the natural values and perception of naturalness on an estimated 1,755 acres of the WSA. These visual intrusions would impact an estimated 585 acres of the Wet Cottonwood Creek Special Management Area (MA 9) and 1,170 acres of the area proposed for multiple uses. Supplemental values would be preserved on 1,700 acres. Treatment of wet meadows would maintain forage areas for moose, elk, and deer and could influence the total increase in big game numbers by as much as 10 percent. Opportunities for primitive recreation would be impacted similar to that described for solitude and naturalness.	Solitude, naturalness, and opportunities for primitive and unconfined recreation would be protected on essentially all 11,380 acres. Sounds of motor vehicles and snowmobiles could impact as much as 3,200 acres along the eastern boundary of the proposed wilderness area. Typically, the noise effects would be intermittent and infrequent. Visual intrusions of outside developments and activities would impact an estimated 180 acres along the eastern boundary and parts of approximately 600 acres of vistas within the proposed wilderness. Primitive and unconfined recreation would be affected similar to that described for solitude and naturalness. Supplemental values would be protected from resource management activities.	Motor vehicles, snowmobiles, and resource management activities could impact the entire 11,380-acre WSA. Most likely, however, noise impacts would be intermittent and infrequent because of the low levels of uses and their seasonal occurrences. Projected activities and developments would impact the perception of naturalness on an estimated 745 acres of the proposed wilderness area and an estimated 960 acres of the area recommended for nonwilderness. Supplemental values and security habitat would be preserved on the 5,870 acres proposed for wilderness. Elk and deer would respond favorably to forage openings (clearcuts) produced by logging on the area proposed for nonwilderness. Opportunities for primitive and unconfined recreation would be preserved on the area recommended for wilderness. However, the sights and sounds of projected developments and activities would affect primitive and unconfined recreation on the area recommended for nonwilderness, much the same as described for solitude and naturalness.

TABLE 2-3b (continued)

SUMMARY OF IMPACTS — HOODOO MOUNTAIN WSA

Issues	Alternatives		
	Proposed Action (No Wilderness/No Action)	All Wilderness	Partial Wilderness
Timber Harvest	There would be no impact on timber harvest as established through the land use plan (Garnet RMP/EIS).	Approximately 8,000 acres of Commercial Forest Land (CFL) would be lost to timber production. An annual harvest averaging 430 mbf would be foregone.	CFL available for timber production would be reduced by 3,500 acres. Annual harvest would be reduced from an average of 430 mbf to 250 mbf.
Minerals	There would be no impact.	There would be no significant impact on development of the WSA's mineral resources.	There would be no predicted impact on mineral exploration and development.
Energy	There would be no impact. No exploration or development is expected.	There would be little to no impact on developing the WSA's oil and gas resources.	There would be no foreseeable impact on oil and gas exploration and development.
Wildlife	Moose numbers are expected to increase, perhaps as much as double (to between 10 and 20 animals), attributed partially to habitat improvement and partially to natural range expansion. Elk are projected to increase by 30 percent, and deer by 40 percent.	Moose, elk, and deer are predicted to remain relatively unchanged; although, moose might increase slightly due to natural range extension.	Moose numbers are expected to increase, perhaps as much as double (attributed to habitat improvement and range expansion). Elk are projected to increase by 25 percent, and deer by 35 percent.
Recreation	Hunting use is projected to increase by 30 visitor days/year as a response to increases in elk and deer numbers. Snowmobile use is projected to increase by 100 snowmobile visitor days/year in response to logging. Hiking use is predicted to increase by 20 visitor days/year as the result of developing a foot trail system. Total recreation use is predicted to increase by 150 visitor days/year, from 215 visitor days to 365.	Hunting use is not expected to increase. Snowmobile use on the WSA (current and projected) would be lost. An increase of 100 visitor days/year is projected due to wilderness designation and development of a foot trail system. The increase represents dispersal of use from nearby, heavily-used wilderness areas rather than new visitors. Total recreation use is projected at 300 visitor days/year.	Hunting use is projected to increase by 20 visitor days/year as a response to increases in elk and deer. Snowmobile use is projected to be 100 snowmobile visitor days/year in response to logging. An increase of 50 visitor days/year is projected in response to wilderness designation and a developed foot trail system. Total recreation use is projected at 370 visitor days/year.

TABLE 2-3b (continued)

SUMMARY OF IMPACTS — HOODOO MOUNTAIN WSA

Issues	Alternatives		
	Proposed Action (No Wilderness/No Action)	All Wilderness	Partial Wilderness
Economics	Timber management would provide 4 jobs ($100,000 in salaries) to the local economy, and $21,500 to the U.S. Treasury. Increased recreation use would be valued at $4,500 annually. Total recreation use would be valued at $10,950. There would be no impact to regional and local economies since increased use is predicted to be a dispersal from other local areas rather than new use.	An estimated 4 jobs with $100,000 in salaries would be lost to the local economy if the WSA was withdrawn from timber production. Designation would cost the U.S. Treasury about $21,500. Increased recreation use would be valued at $3,000 annually. Total recreation use would be valued at $9,000. There would be no impact to regional and local economies since increased use is predicted to be a dispersal from other local areas rather than new use.	An estimated 1.5 jobs and $37,500 in salaries (timber related) would be lost to the local economy. Approximately $9,000 in annual timber sale receipts would be lost to the U.S. Treasury. Increased recreation use would be valued at $5,100 annually. Total recreation use would be valued at $11,100. There would be no impact to regional and local economies since increased use is predicted to be a dispersal from other local areas rather than new use.
Fire	Limited fire suppression would be applied to 2,000 acres. Full fire suppression would be used on the remaining 9,380 acres. Prescribed burning would be used on about 1/3 of the cutting units (approximately 140 acres) to reduce slash and prepare the site for seedling reestablishment.	Only limited fire suppression (no motorized ground equipment) would be authorized. Prescribed burning would not be used.	Limited fire suppression would be applied to 6,170 acres. Full fire suppression would be authorized on 5,210 acres. Prescribed burning would be used on slopes greater than 40 percent to remove slash and prepare logged sites for reforestation.

TABLE 2-3c

SUMMARY OF IMPACTS — QUIGG WEST WSA

Issues	Alternatives: Proposed Action (All Wilderness)	Alternatives: No Wilderness
Wilderness Values	Wilderness values would be protected on the entire 520 acres.	Wilderness values would be preserved by administrative decision in the Garnet RMP/EIS.
Timber Harvest	Timber harvest would be precluded by legislative action.	No impact, the WSA is withdrawn from timber production by administrative action.
Minerals	Wilderness designation would have no adverse impact on the development of mineral resources on the WSA in the foreseeable future.	There would be no impact predicted on development of the WSA's mineral resources.
Energy	There would be no adverse effects on developing the oil and gas resources of the WSA in the foreseeable future.	There would be no impact predicted on oil and gas leasing and exploration.
Wildlife	There would be no adverse effects on big game or other wildlife species.	Big game habitats would be preserved by administrative action and numbers would probably remain at or near current levels.
Recreation	As a wilderness tack-on, visitor use could double, going from the estimated current use of 25 visitor days/year to 50.	No use of the WSA by motor vehicles and snowmobiles is expected to continue. However, visitor use could be expected to increase by 10 visitor days/year because of a growing national demand for primitive recreation.
Economics	Withdrawing the WSA from timber production would cost the local economy the potential for a part-time job with $3,500 in salary. The U.S. Treasury would lose the potential of $750 in annual timber sale receipts. Increased recreation use would generate an estimated $750 to the local economy. Total income from recreation use would be $1,500.	Impacts on timber related incomes would be the same as described under the Proposed Action. Increased recreation use would provide an estimated $300 to the local economy. Total recreation use would provide an estimated $1,050 to the local economy.
Fire	Only limited fire suppression would be authorized. Prescribed burning would not be used.	Only limited fire suppression is authorized under administrative decision.

CHAPTER 3
AFFECTED ENVIRONMENT

REGIONAL AND LOCAL WILDERNESS CHARACTERISTICS

Wilderness Opportunities in the Area

The National Wilderness Preservation System (NWPS) contains 271 units and covers 80,497,805 acres. Of this, 56,521,416 acres (about 70 percent) are in Alaska and 23,976,389 acres in the lower 49 states.

A three-state area including Montana, Idaho, and Wyoming make up the affected region for the purposes of this study. Table 3-1 lists by state the numbers and acreages of areas that have been designated wilderness by Congress, those that have been endorsed by the President for wilderness status, and those areas that were still being studied in 1985.

TABLE 3-1
REGIONAL WILDERNESS OPPORTUNITIES

State	Agency	Number of Areas	Acres
Designated Wilderness Areas			
Montana	FS	12	3,666,342
	FWS	3	64,997
	BLM	1	6,000
Idaho	FS	5	2,944,435
	NPS	1	43,243
Wyoming	FS	6	2,193,750
Presidentially Endorsed Areas			
Montana	NPS	2	1,084,660
	FS	32	681,355
	FWS	15	161,580
Idaho	FS	17	1,240,424
Wyoming	FS	17	627,100
	NPS	2	1,848,744
Further Study Areas			
Montana	FS	23	1,207,769
	BLM	36	437,642
Idaho	FS	11	571,931
	BLM	54	1,326,799
Wyoming	FS	7	414,870
	BLM	36	565,260

BLM - Bureau of Land Management
FS - Forest Service
FWS - Fish and Wildlife Service
NPS - National Park Service

About 51 percent of the acreage still being studied in the three-state area is on BLM-administered land. The Bear Trap Canyon in Madison County, Montana contains 6,000 acres and is the first BLM-administered wilderness area.

Great Falls is the only standard metropolitan statistical area within a five-hour drive of the WSAs. Missoula, with a county population of 75,432, is also within a five-hour drive of the WSAs. The wilderness opportunities near both cities are plentiful and varied (see Table 3-2). Appendix E contains a summary of the status of wilderness and wilderness study areas in Montana.

The National Wilderness Preservation System contains mainly examples of high elevation mountain ecosystems and alpine, subalpine, and glacial landscapes. Only 50 of the 241 basic ecosystems listed by Bailey-Kuchler (Davis 1980; Kuchler 1964; USDA FS 1976, 1978a) are represented. An additional 62 ecosystems will be added to the NWPS if the presidentially endorsed areas are added. The areas still being studied contain an additional 78 ecosystems. Appendix Q of the Garnet RMP/EIS outlines the characteristics of the ecosystem represented in the three wilderness study areas.

Wilderness Supply and Demand

Wilderness areas provide opportunities for primitive types of recreation and for enjoyment of a variety of ecosystems in their natural state. The demand for these types of recreational experiences has increased since the mid-1960s. There was a threefold increase in hiking and backpacking by the late 1970s. Use has leveled off in the 1980s in most cases except snowbased activities, day use, and family recreation, which continue to increase (Spencer et al. 1980).

As more people seek recreation in a fixed amount of wilderness areas, the chance to have a wilderness experience declines. In 1971, a survey of hikers in wilderness areas showed more than half were dissatisfied with the opportunities for solitude (Stankey 1971). Another survey found that managers of existing wilderness areas considered 49 percent of the areas to be crowded (Cole and Washburne 1980).

Wilderness use increases in the summer months. Most areas in the NWPS are high elevation and best suited for summer use. The NWPS contains few low elevation areas that could provide year-round use.

TABLE 3-2
PROXIMITY OF WILDERNESS TO POPULATION CENTERS

Population Center	State	BLM Number of Areas	BLM Acres	OTHER Number of Areas	OTHER Acres
Statutory Wilderness					
Missoula	Montana	1	6,000	13	3,164,646
	Idaho	—	—	5	2,944,435
	Wyoming	—	—	3	1,595,547
	Oregon	—	—	3	603,132
Total Wilderness Acres Within a 5-hour Travel Time					8,313,760
Great Falls	Montana	1	6,000	12	3,292,912
	Idaho	—	—	1	1,089,017
Total Wilderness Acres Within a 5-hour Travel Time					4,387,934
Presidentially Endorsed Areas					
Missoula	Montana	—	—	29	1,365,702
	Idaho	—	—	39	2,105,559
	Wyoming	—	—	6	123,876
	Oregon	—	—	1	34,000
Total Wilderness Acres Within a 5-hour Travel Time					3,656,217
Great Falls	Montana	—	—	31	1,392,102
	Idaho	—	—	1	163,857
	Wyoming	—	—	1	1,013,221
Total Wilderness Acres Within a 5-hour Travel Time					2,569,180
Other Study Areas					
Missoula	Montana	19	220,783	27	1,263,514
	Idaho	7	372,993	16	1,165,057
	Oregon	3	18,660	13	280,470
Total Wilderness Acres Within a 5-hour Travel Time					3,320,477
Great Falls	Montana	34	394,477	11	1,014,066
	Idaho	2	21,255	1	6,700
	Wyoming	2	48,460	—	—
Total Wilderness Acres Within a 5-hour Travel Time					1,484,908

Wilderness in the Local Area

The local area is considered to be Powell and Granite counties. This is the site of the BLM wilderness study areas. In addition these counties contain portions of four designated wilderness areas, three proposed wilderness areas, and three areas still being studied. Table 3-3 lists the areas by county.

TABLE 3-3
EXISTING AND PROPOSED WILDERNESS AREAS AND AREAS UNDER WILDERNESS STUDY

Area Name	Unit Number	Agency
Powell County		
Existing Wilderness		
Bob Marshall	NF005	FS
Scapegoat	NF07	FS
Proposed Areas		
Great Bear, Bob Marshall, Scapegoat, Swan	B1485	FS
Clearwater/Montoure	Q1485	FS
Further Study Area		
Flint Range	1428	FS
Dolus Lake	1429	FS
Sapphires	1421	FS
Wales Creek	MT-074-150	BLM
Hoodoo Mountain	MT-074-151A	BLM
Granite County		
Existing Wilderness		
Anaconda/Pintler	NF003	FS
Welcome Creek	NF103	FS
Proposed Areas		
Quigg (Slide Rock)	Q1807	FS
Further Study Areas		
Flint Range	1428	FS
Dolus Lake	1429	FS
Sapphires	1421	FS
Quigg West	MT-074-155	BLM

WALES CREEK WSA (MT-074-150)

General Description

The Wales Creek WSA is located in Powell County approximately 40 miles due east of Missoula, Montana, in the Garnet Mountain Range. Boundaries of the WSA are formed by private and state lands and by roads (see Wales Creek Land Status Map, Chapter 1). There are no state or other federal lands within the WSA. Two roads and a patented mining claim are cherrystemmed into the WSA.

Wilderness Resources

Size

The Wales Creek WSA contains 11,580 acres of public lands.

Naturalness

Wales Creek WSA encompasses the last major unroaded drainage in the West Garnet Mountains. Wales Creek WSA is surrounded by extensive logging and development.

The few traces of human activities detailed in Table 3-4 and shown on the Existing Facilities Map are minor in significance. These include vehicle way traces of historic mining and an early 1970s tree thinning project adjacent to the western boundary road. The two significant signs of human presence are the Wales Creek Fire Road and the Yourname Creek Road. They lie a half mile apart and extend through the middle of the WSA. These two roads adversely affect the wilderness experience of visitors expecting to find a natural appearing area. The majority of the WSA, however, contains no evidence of human influence.

Outstanding Opportunities

The WSA is made up of two major creek drainages (see Wales Creek Land Status Map, Chapter 1) and the bordering forested ridges. In the Wales Creek drainage numerous side drainages, combined with dense stands of lodgepole pine, spruce, Douglas fir, subalpine fir, and aspen, provide opportunities for visitors to be physically and visually separated from one another.

Although the Yourname Creek drainage does not contain the high number of side drainages that Wales Creek does, the dense lodgepole pine stands in the drainage act as a screening device to conceal visitors from one another. The rectangular configuration and two-to-three-mile core-to-perimeter distance of the WSA further enhance solitude values.

From several high points, such as Chamberlain Mountain, the visitor can see signs of human activities such as towns, logging, mining, etc. These sights are unavoidable.

Vehicle traffic on the Wales Creek Fire Road and on Yourname Creek Road would be noticeable and would affect opportunities for solitude on the parts of the WSA near those roads. The heaviest traffic on Wales Creek Fire Road would occur during hunting season. Wales Creek Fire Road bounds the southern edge of the Wales Creek drainage. For approximately 2 miles, of the WSA boundary Wales Creek Fire Road contours a slope that would be exposed to resource management activities in Yourname Creek drainage. Portions of the Wales Creek WSA provide outstanding opportunities for solitude.

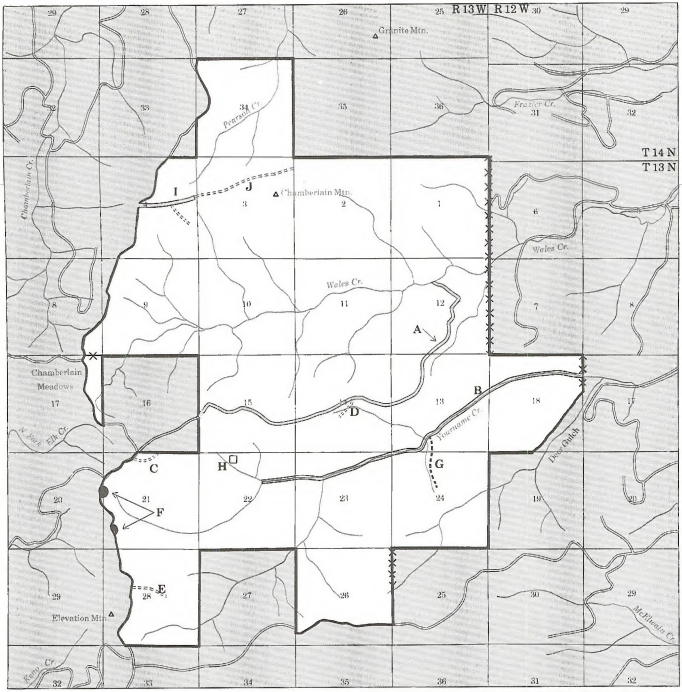
In summary, because of its size, ruggedness, and other physical characteristics, portions of the Wales Creek WSA provide outstanding prospects for primitive and unconfined recreation. The potential exists for a diversity of recreational opportunities that would probably have more local appeal than regional or national. Quality hunting is the key attraction of the WSA at the present time.

Supplemental Values

Warm water (thermal) springs exist in at least four locations in the Wales Creek drainage. These thermal areas were historically used by miners for recreational purposes. While thermal springs are year-round attractions, they would have particular appeal to certain classes of winter users (e.g., cross-

TABLE 3-4
MANMADE FACILITIES ON THE WALES CREEK WSA

Map Key	Feature	Legal Location	Length/Area	Remarks
A	Wales Cr. Fire Rd.	T13N, R13W Sec. 12,13 and 15	Approx. 5.2 mi.	This road is a cherrystem entering the WSA
B	Yourname Cr. Rd.	T13N, R12W Sec. 17,18; T13N, R13W Sec. 13,22 and 23	Approx. 3.6 mi.	Road is cherrystem entering the WSA
C	Vehicle Way off Elevation Mtn. Rd.	T13N, R13W Sec. 21 NW 1/4	Approx. 1/2 mi.	
D	Vehicle way off Wales Cr. Fire Rd.	T13N, R13W Sec. 14 SW 1/4	Approx. 125 yds.	Leads to spring
E	Vehicle Way off Elevation Mtn. Rd.	T13N, R13W Sec. 28 N 1/2	1/4 mi.	
F	Thinnings (2)	T13N, R13W sec 21	Under 1 ac.	Substantially revegetated
G	Old fire line	T13N, R13W sec. 13 and 24	Approx. 1/2 mi.	Visible from the air
H	Old cabin	T13N, R13W Sec 22	Under 1 ac.	Partially collapsed
I	Chamberlain Mtn. Rd.	T13N, R13W Sec. 4	Approx. 3/4 mi.	This road is a cherrystem entering the WSA
J	Chamberlain Mtn. Vehicle Way	T13N, R13W, Sec. 3	Approx. 1 mi.	Vehicle way off Chamberlain Mtn. Road



WSA Boundary

Fence

Cabin

Thinning Area

Vehicle Way

Fireline

Map Key	Feature
A	Wales Cr. Fire Rd.
B	Yourname Cr. Rd.
C	Vehicle Way Off Elevation Mtn. Rd.
D	Vehicle Way Off Wales Cr. Fire Rd.
E	Vehicle Way Off Elevation Mtn. Rd.
F	Thinnings (2)
G	Old Fire Line
H	Old Cabin
I	Chamberlain Mtn. Rd.
J	Chamberlain Mtn. Vehicle Way

WALES CREEK EXISTING FACILITIES MAP

NORTH

0 1 2 Miles

0 1 2 3 Kilometers

1:63,360

country skiers, etc.). However, winter recreation is rather limited in amount and diversity because of poor winter access.

Thermal (Warm Water) Spring on Wales Creek WSA

The WSA is a core area for moose in the West Garnet Mountain Range, and it is prime summer/fall range for elk and deer. It is also a nesting area for goshawks, a Montana species of special interest or concern.

The major recreational use is big game hunting. The WSA provides seasonal habitat for a moose herd of about 25 to 30 animals and an elk herd of about 200 to 300.

Because of its roadless character, the WSA has value for the walk-in hunting experience it affords. Associated with the hunting possibilities are chances for wildlife viewing and wildlife photography.

Because Wales Creek WSA is the last major unroaded drainage in the West Garnet Mountains, it has scarcity value within the local context of the Garnet Mountain Range.

Ecosystem Representation

The WSA consists of three ecotypes as defined by Bailey and Kuchler (Kuchler 1964; USDA, FS 1976, 1978a, 1978b) and described in Appendix Q of the RMP/EIS. Douglas fir forest makes up 38 percent of the WSA; western spruce and fir forest, 56 percent; and alpine meadows and barren, 6 percent. All are well represented in existing wilderness areas.

In both a local and regional context, Wales Creek lies in an area where vast acreages of the three ecotypes have been designated as wilderness. Several more areas have been recommended for wilderness. Appendix E lists wilderness study areas, proposed wilderness areas and existing wilderness areas of all agencies in Montana.

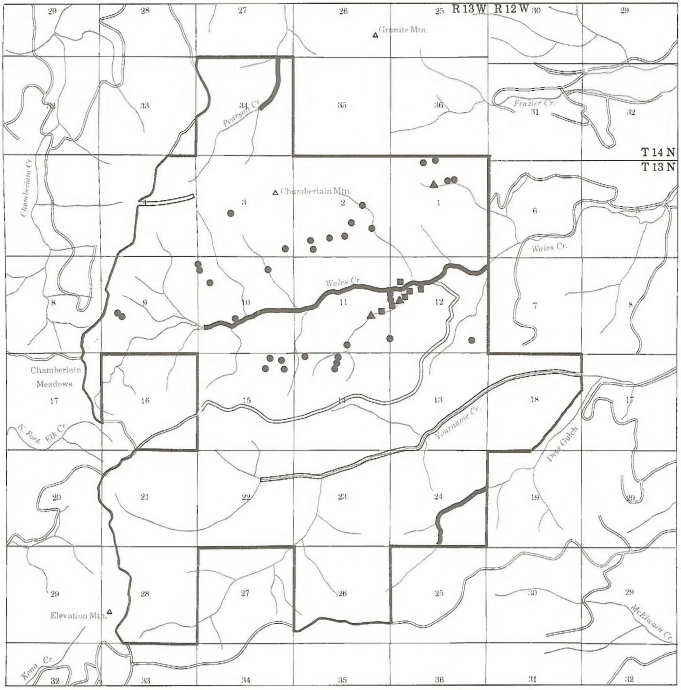
Summary of Wilderness Quality

Wales Creek provides visitors with a natural appearing area replete with opportunities for solitude and primitive recreation. The WSA also offers a diverse array of supplemental values most of which are found on the Wales Creek drainage (see Wildlife Habitat and Unique Geologic Features Map under Wildlife and Fisheries Resources). Wales Creek Fire Road and Yourname Creek Road adversely affect solitude values in the central portion of the WSA and limit wilderness manageability.

Forest Resources

Wales Creek WSA contains 10,850 acres of Commercial Forest Land (see Forest and Riparian Map). Of these acres, 4,450 are in the Wales Creek drainage area and 6,400 are in the remaining 6,680 acres of the WSA. The WSA contains 730 acres of noncommercial forest land, of which slightly more than half are in the Wales Creek drainage. Noncommercial forest land has timber, but it is low in wood production or is impractical to log due to the presence of extensive rock outcroppings. Wales Creek also has several nonforested talus slopes and meadow lands. The majority of Commercial Forest Land (CFL) in Yourname Creek drainage could be harvested using conventional harvest techniques, but 4,861 acres with granitic soils in Wales Creek drainage would require special harvest systems. A private road to placer mine claims along Yourname Creek reaches the core of the WSA. However, access roads would need to be constructed to facilitate logging the area (see Timber Management Actions for Wales Creek Proposed Action, Chapter 2). The WSA has an estimated timber harvest potential averaging 789,000 board feet per year (789 mbf/year) sustainable yield. Approximately 300 mbf of this potential are in the Wales Creek drainage area and 489 mbf are in the remainder of the WSA.

Timber species by acreage include 5,330 acres of lodgepole pine, 440 acres of ponderosa pine, 4,875 acres of Douglas fir, and 118 acres of Englemann spruce. The lodgepole stands in the Wales Creek and Yourname Creek drainages have been identified as problem sites if the current level of mountain pine beetle infestation increases to epidemic level.



WALES CREEK WILDLIFE HABITAT AND UNIQUE GEOLOGIC FEATURES MAP

- Stream with Fisheries
- Wallow
- Thermal Spring
- Mineral Lick

NORTH

0 1 2 Miles

0 1 2 3 Kilometers

1:63,360

WALES CREEK FOREST AND RIPARIAN MAP

Noncommercial Forest

Commercial Forest Land

Riparian

NORTH

0 1 2 Miles

0 1 2 3 Kilometers

1:63,360

Energy and Minerals Resources

Wales Creek WSA is in the Montana Overthrust Belt. Its bedrock consists of a thick series of old sedimentary rocks that are folded and faulted. Plutons of igneous rocks intrude the older units. Younger extrusive volcanic rocks cover large parts of the WSA. Prospects and mineral occurrences for gold are semiactive in Yourname Creek, and there is an active gold placer operation just southwest of the WSA. A WGM Incorporated publication **"Geology, Energy and Mineral (GEM) Resources Assessment of the Garnet GRA, Montana, Including the Wales Creek (075-150), Hoodoo Mountain (075-151A) and Gallagher Creek (075-151B) Wilderness Study Areas," July 1983,** (referred to as the GEM) classified the Wales Creek WSA as high to moderate potential for occurrence of metallic mineral resources. The southern portion of the Wales Creek WSA is classified as highly favorable for the occurrence of metallic minerals based on direct evidence from the vicinity of the WSA, specifically placer gold deposits, precious metal-bearing quartz veins in intrusive and sedimentary rocks, and base and precious metal-bearing skarn deposits. The classification is based on the geologic environment and the presence of mines (outside the WSA) with significant historic metal production. In addition, the highly anomalous gold values in panned concentrate samples from drainages south of the WSA indicate significant placer gold accumulations and possibly a lode source upstream from the sample location. Currently, there is some exploratory drilling occurring to the southwest of the WSA that should provide additional information on ore deposits in the area. The remainder of the WSA is classified moderately favorable based on limited direct evidence including the presence of a geologic setting similar to known metal deposits and occurrences in the adjacent areas.

Twenty-eight unpatented mining claims encompassing approximately 560 acres are located in Yourname Creek drainage. Table 3-5 and the Wales Creek Minerals Map (under Minerals Management Actions for Wales Creek WSA Proposed Action, Chapter 2) detail the numbers, acreages and locations of those claims. A patented claim (Patented Mineral Survey #4799) is cherrystemmed into the WSA.

The potential for other mineral resources was classified as low to moderate in the GEM.

Before a moratorium on oil and gas leasing in WSAs (issued Dec. 30, 1982) the area had 1,600 acres under post-FLPMA leases; the remainder of the WSA was under lease application (Table 3-6). Since the moratorium, the leases and applications have been adjudicated and abandoned. One of the leases comprising approximately 40 acres on the WSA was canceled on 12/01/85. Another lease of approximately 1,400 acres was closed as of 03/29/88. Two lease applications in T13N, R13W, Section 14 SE1/4 are pending until a determination is made concerning management status of the WSA (wilderness/nonwilderness). No leasing will occur during the moratorium. The GEM classified the Wales Creek WSA as having low favorability for the occurrence of oil and gas based on limited direct evidence. The classification is based on the generally unfavorable geologic setting of the WSA as compared with known hydrocarbon-producing areas in the Overthrust Belt. Most of the WSA is underlain by igneous terrane.

The GEM classifies other leasable resources as having a low favorability for occurrence.

TABLE 3-5
WALES CREEK WSA - METALLIC MINERAL
(GOLD & SILVER) CLAIMS

Location		Number of Claims	Approx. Acreage	Current Status
T. 13 N., R. 12 W.,				
Sec. 18,	NE1/4	2	40	Unpatented mining claim still valid
	SE1/4	7	140	Unpatented mining claim still valid
	SW1/4	3	60	Unpatented mining claim still valid
	S1/2	5	100	Unpatented mining claim still valid
	E1/2	3	60	Unpatented mining claim still valid
	NW1/4	1	20	Unpatented mining claim still valid
T. 13 N., R. 13 W.,				
Sec. 13,	SE1/4	1	20	Unpatented mining claim still valid
	NE1/4	1	20	Unpatented mining claim still valid
Sec. 22,	NE1/4	1	20	Unpatented mining claim still valid
	NW1/4	1	20	Unpatented mining claim still valid
Sec. 23,	N1/2	2	40	Unpatented mining claim still valid
Sec. 24,	NE1/4	1	20	Unpatented mining claim still valid

TABLE 3-6
WALES CREEK WSA - POST FLPMA OIL AND GAS LEASES[1]

Location	Lease Number	Date of Lease	Current Status
T. 13 N., R. 12 W.,			
Sec. 18, All	M35928	11-12-85	Cancelled 12/01/85
T. 13 N., R. 13 W.,			
Sec. 13, NW1/4	M39820	12-06-85	Closed 03/29/88
Sec. 14, SW1/4	M39820	12/06/85	Closed 03/29/88
SE1/4	M59560	12/06/85	Appl. Pending 08/30/83
Sec. 21, SE1/4	M39820	12/06/85	Closed 03/29/88
Sec. 22, SE1/4	M39820	12/06/85	Closed 03/29/88
Sec. 23, SE1/4	M39820	12/06/85	Closed 03/29/88
Sec. 24, SE1/4	M39820	12/06/85	Closed 03/29/88
Sec. 26, SE1/4	M39820	12/06/85	Closed 03/29/88
Sec. 28, SE1/4	M39820	12/06/85	Closed 03/29/88

[1]There are no pre FLPMA leases. All leases are covered under wilderness stipulations.

Wildlife and Fisheries Resources

Threatened and Endangered Species

The entire resource area has been reviewed for occupied, critical, or essential habitats. There are no known threatened and endangered species habitats in the Wales Creek WSA; nor were there any recommendations for designations of habitats as critical or essential.

Big Game Species

Moose use the WSA in conjunction with surrounding similar habitat on a yearlong basis. A population census, made during 1977 to 1978, estimated 25 to 30 animals in the WSA. This number included three mature bulls and five young bulls, with the remainder being cows and calves. Five antlered bull permits are issued each year with success rates of 100 percent most years in or adjacent to the Wales Creek WSA. Wales Creek drainage area is considered a core area for moose numbers and distribution in the West Garnet Mountains. The riparian zone of Wales Creek with its wet meadows and willow communities is key habitat for moose. In association with the riparian zone in Wales Creek, the adjacent Elk Creek Burn provides another component of prime moose habitat. However, the habitat is changing, through natural processes, causing a reduction in forbs and browse that moose prefer.

Moose in the Garnet Mountains of Western Montana

The WSA is good to excellent elk summer/fall habitat. Some winter and spring use occurs on ridgelines and southern exposures at lower elevations in Wales Creek and Yourname Creek drainages. Elk are dispersed throughout the area; consequently, there is no large scale winter migration nor preferred migration routes. The WSA is predominantly forested and provides a variety of cover types - hiding, thermal, etc. The wet meadows along Wales Creek are key components of the elk habitat types. They offer cool bedding areas during the summer because of the moisture associated with them. Also, because of the moist environment, year-round succulent forage and browse plants (shrubs associated with moist sites) are provided. Wallows are common features of the wet meadows and afford relief from insects. Most of the special big game habitat features such as wallows and licks occur on Wales Creek (see Wildlife Habitat and Unique Geologic Features Map). Habitats of the WSA contribute to the support of approximately 200 to 300 elk that occur in and adjacent to the WSA. The roadless character and abundant hiding cover of Wales Creek and upper Yourname Creek are favorable attributes for elk management during the hunting season.

A telemetry study in the adjacent Chamberlain Creek area has found no displacement of elk into Wales Creek as a direct response to logging activity. However, as activity in Chamberlain Creek and other drainages surrounding the WSA expands and increases in intensity, Wales Creek may become attractive to more elk.

Both mule deer and white-tailed deer use the WSA predominantly during the summer and fall. Limited winter and spring habitat is available in the lower elevations of Wales and Yourname Creeks. Neither harvest data nor accurate census

data are available for the WSA; however, deer numbers are estimated at approximately 100 to 200 animals.

Thermal springs on side drainages to Wales Creek are used by big game, as indicated by tracks; however, their value to big game is not known.

Black bears occur in both Yourname and Wales Creek drainages. No population data are available; however, riparian habitat of the WSA is favorable to black bear use.

Indirect sign of mountain lion indicates this species occurs yearlong in the WSA.

Other Species

Cutthroat trout occur in Wales Creek, and cutthroat and brook trout occur in Yourname Creek. The lower productivity of fish in the two streams is typical of cool aquatic habitats with granodioritic substrates in the region. Fishing pressure is light; however, the aquatic system is important as a genetic reservoir of native trout and as a supply of high quality water to downstream fisheries (see Wildlife Habitat and Unique Geologic Features Map).

High Water Quality and Native Trout are Key Values of Wales Creek

Range Resources

The only livestock grazing that occurs on the WSA is in the Yourname Creek bottoms since the surrounding hillsides are steep and heavily forested. Most grazing occurs on the private mining claim that follows the creek in T13N, R12W, Section 18. Portions of T13N, R13W, Section 13 are also leased for grazing. Approximately 520 acres of public land are leased under the Deer Gulch custodial lease # 7117. Approximately 6 AUMs are available at the present time on these public lands. The portion of lease # 7117 that includes the WSA lands is grazed each year between June 15 and October 15. No other legal grazing occurs inside the WSA. Range improvements include a spring and a boundary fence, the locations of which are shown on the Existing Facilities Map under Wilderness Resources.

Until 1970, the Wales Creek drainage was leased for livestock grazing under the Wales Creek AMP (7121). However, watershed damage, adverse impacts on Montana West Slope Cutthroat Trout populations, and general unsuitability for livestock grazing halted the program, and the WSA has not been leased since. The WSA has an estimated grazing capacity of 121 AUMs if completely leased.

Soil and Water Resources

The Wales Creek drainage, which is almost entirely on granodiorite bedrock, has extensive wet riparian areas (see Forest and Riparian Map under Forest Resources) and a number of thermal springs. The nature and extent of these wet areas, in conjunction with highly erosive soils, indicate a drainage that is highly susceptible to soil erosion and water quality problems unless extreme care is used in development activities.

Water-quality data are nonexistent for Wales Creek, Yourname Creek, Deer Gulch, and Pearson Creek, the four streams that drain the WSA. As these watersheds are essentially undisturbed, water quality is expected to be high, and can be expected to remain high in the absence of surface disturbing activities.

Belt series rock (4,500 acres), tertiary age andesite and granodiorite (3,100 acres and 4,200 acres, respectively), and limestone (200 acres) occur in this WSA. Soils formed in andesitic materials have moderately to strongly developed subhorizons. Potential soil compaction, erosion, and gully formation are moderate to severe. Where gravel content is greater than 35 percent, the foregoing problems are much less severe. Soils formed in granodiorite usually have very weakly developed subhorizons. These soils are highly erosive when exposed, particularly at slopes greater than 15 percent. Soils formed in tertiary age andesite have weakly developed subhorizons with low clay and high gravel content in the profile. These soils are generally stable for most uses. Soils formed in Belt series rock and limestone generally have weakly developed subhorizons with a high gravel content. These soils are very stable with a low erosion and compaction potential.

Recreation Resources

The quality of recreational opportunities is high in this WSA. The landforms are interesting and provide a scenic backdrop that enhances most dispersed recreational activities. The rough topography of Wales Creek WSA provides excellent photographic opportunities from several viewpoints. The WSA offers opportunities for hunting, fishing, horseback riding, hiking, camping, snowmobiling and other recreation uses. Thermal springs in the Wales Creek drainage attract occasional visitors to their warm waters. The feasibility of developing sites for recreational uses - campgrounds, etc. - is low because the WSA is relatively isolated from population centers and it is not easily accessible.

Motorized vehicle use is restricted to existing vehicle ways and roads. Access to the WSA from the west is via Garnet Range Road to Elk Creek Road to Keno Creek Road, or Kennedy Creek Road to Elevation Mountain Fire Road to Wales Creek Fire Road (see Wales Creek Land Status Map, Chapter 1). This road system is administratively closed from January 1 to April 30 to all motor vehicles except snowmobiles; however, it may be closed by snow earlier. About 4 miles of the Elevation Mountain Fire Road north of its junction with Wales Creek Fire Road is closed to motor vehicle use by the public except for snowmobiles. Access from the east is from the Helmville/Ovando Road to the Yourname Creek Road. Two roads that together total approximately 6 miles are cherrystemmed into the WSA (Wales Creek Fire Road - 5.2 miles and Chamberlain Mountain Road - 0.75 mile). Private placer claims along Yourname Creek and the private road accessing them are also cherrystemmed into the WSA. The cherrystem is shown on the Wales Creek Land Status Map in Chapter 1. Yourname Creek Road is private access used for mining and logging on private lands. Access would be necessary before timber harvest could begin in Yourname Creek drainage. Legal public access would be acquired to the east boundary of the WSA and into Yourname Creek Area. After legal and physical access are established, public use of the primary haul road might be authorized yearlong or on a seasonal basis. Spur roads off the primary haul road would be closed to general motor vehicle access (administrative access excluded). Wales Creek Fire Road and Chamberlain Mountain Road are also shown on the Wales Creek Land Status Map. Both are used for fire suppression and Wales Creek Fire Road provides hunting access as well. The lower one-half mile of the Wales Creek Fire Road is closed due to severe erosion that started from past vehicle use. Wales Creek Fire Road is BLM controlled and would be open for motor vehicle use; however, it would not be improved. The road condition and grade suit it to predominantly 4-wheel drive use, and it will probably remain that way for at least the life of the RMP. Chamberlain Mountain Road is not accessible to the general public because of year-round closure of the northern 4 miles of Elevation Mountain Fire Road. In addition, three vehicle ways comprise approximately one mile of historic vehicle access. These vehicle ways are within the WSA and are closed yearlong to maintain the integrity of the walk-in hunting complex. All of the motor vehicle use occurs outside the WSA because of the lack of interior ways. Motor vehicle use of the Garnet Range Road (during the time it is open) has been estimated at 50 visitors/day for 215 days, with a total estimate of 10,750 visitor days/year. Use associated with the road network that ties into Wales Creek Fire Road (Elevation Mountain/Kennedy Creek/Keno Creek Road system) was estimated at 20 percent of the Garnet Range Road use (approximately 2,000 visitor days/year). Extrapolating that use to the Wales Creek Fire Road, vehicle traffic was estimated at 23 to 24 percent (470 visitor days/year) of that occurring on the adjacent road system.

Limited snowmobile use occurs in the WSA, with estimates of 20 visitor days/year on the Wales Creek Fire Road and 10 visitor days in the Yourname Creek area. A designated, signed snowmobile trail has been established adjacent to the west boundary of the WSA. Use of that system is estimated at about 1,500 visits/year. Garnet Range Road, Kennedy Creek Road, Keno Creek Road and Elevation Mountain Fire Road are included in the trail system. The WSA is almost a timber monotype, and snowmobile use would increase significantly if additional openings were provided.

The dominant use of the WSA is for big game hunting. As a basis for determining hunting use of the WSA, 1982 hunting season data for the Blackfoot Special Management Area, which bounds on the west side of the WSA, were used. During that year, estimated use was 1,780 visits with a factor of 1.5 days per visit applied (2,670 hunter days). Hunting use of the WSA was estimated at about 400 visitor days per year (about 15 percent of the Blackfoot Special Management Area use). Motor vehicle use associated with hunting and other uses of the WSA was estimated at 470 visitor days per year. That use is almost exclusively on the roads adjacent to the west side of the WSA and on Wales Creek Fire Road. The following assumptions were made about motor vehicle use:

* Hunting use is the major contributor to vehicle use of boundary and cherrystemmed roads open to the public.

* Hunting use is estimated at 85 percent (400 visitor days per year) of the total vehicle use, with 15 percent (70 visitor days per year) associated with other activities such as four-wheel driving, sightseeing, photography and administrative uses.

* Ninety percent (360 visitor days per year) of the hunting use of the WSA is assumed to be walk-in, with hunters leaving their vehicles at various points along the boundary.

Best estimate is that hunting accounts for as much as 85 percent of the motor vehicle use associated with the WSA, or 400 visitor days per year. Wales Creek WSA is part of a continuous belt of walk-in hunting areas from Chamberlain Creek on the north to Murray and Douglas Creeks on the south. Included are the Blackfoot Special Management Area, the Wales Creek/Pearson Creek area, and the Yourname Creek/McElwain Creek/Douglas Creek area. Collectively, these areas contain over 66,000 acres, of which 26,700 acres are BLM-administered public lands. Since the WSA is part of a walk-in hunting area, much of the access is by hiking. Walking is assumed to account for about 90 percent of the hunting access or 360 visitor days per year, with the remaining 10 percent assumed to be road hunting.

About 6 miles of unconnected and nondesignated trails have been located along Wales Creek. It is estimated that 30 percent of the walk-in use of Wales Creek drainage is associated with those trails. Similar trail segments have been discovered in the Yourname Creek drainage. Extrapolating the 30 percent trail use in Wales Creek drainage to the WSA would result in an estimated trail use of 110 visitor days/year. That figure is a part of the walk-in hunting use and not an addition to it. The trail segments of the WSA could be developed into a foot trail system with a reasonable expenditure of funds and labor since connection of existing segments is all that is necessary. Such a trail system would likely increase walk-in use of the WSA to some extent. Many of the existing trail segments are supposed remnants of trails developed by the Blackfoot Forestry Protective Association (BFPA) in the late 1800s or early 1900s. Some may be remnants of trails that were used for livestock herding that occurred about the same time as the BFPA trails were established.

Primitive camping occurs on the WSA in association with hunting. The amount is small, estimated at 10 percent of the total hunting use (approximately 40 camping days/year). Most of this is assumed to occur in the Wales Creek drainage.

There are no developed recreation sites (campgrounds, picnic areas, etc.) in the WSA.

Wales Creek WSA is classified in VRM Class I (see Appendix F of the Garnet RMP/EIS for descriptions of the VRM classes).

Cultural Resources

The core of the Wales Creek WSA has not been systematically examined for cultural resources. However, information can be derived from inventories of similar environments and applied to this WSA.

Prehistoric use of the Wales Creek WSA and other portions of the Garnet Mountain Range has occurred for at least 10,000 years. The high, rugged mountain and forested character of the Garnets limits human use to the period from late spring to the early fall. Prehistoric sites found to date focus on areas with high concentrations of resources. These include basalt lithic sources, open meadows and forest with high forb and big game populations, and perennial water sources.

Due to its location and the abundant pockets of concentrated resources, the Wales Creek drainage would provide an excellent study area for testing hypotheses on Late Paleo Indian and Early Middle Period subsistence patterns. The patterns of prehistoric use along the thermal springs in Wales Creek offer another topic for investigation.

Historic use of the wilderness study area occurred in waves. One gunflint recovered from the WSA may come from the Fur Trade Period or historic Native American hunting activities. The discovery of gold within and southwest of the WSA in 1865 provided the greatest impetus for historic use and occupation. The community of Top O'Deep was established near the study boundary. Portions of Douglas Creek and Yourname Creek were also mined. Placer mining in the other drainages, except Wales Creek, occurred in 1895-1915 and 1932-1942. The Wales Creek thermal springs have been used recreationally throughout the historical period, and historical hunting has also occurred.

Social and Economic Conditions

The results of a statewide poll (Wallwork; 1984) indicate that Montanans strongly support the concept of setting aside certain public and state lands as designated wilderness areas. Regardless of age, sex, political preference or place of residence, more than 75 percent of those surveyed favored the addition of more wilderness areas in the United States. However, only 25 percent said that Montana needs more wilderness areas. National opinion survey studies (ORC, 1977 and ORC, 1978) indicate the United States population is divided on the subject of wilderness. It appears that about 33 to 50 percent of the population feels there is currently enough wilderness, while a similar proportion feels there is a shortage.

Residents of the local area exhibit attitudes and values typical of rural, ranch-oriented societies of the western United States. The rural character of the area is what residents value most about their lifestyles. They also value the characteristics of the local communities: knowing everyone else, lack of urban problems, relaxed pace and personal freedom. Many residents feel the biggest threats to their lifestyles are government interference, wilderness designation, high taxes, and diverting the use of public lands to wildlife or recreation. They want the land controlled at the local level and resent interference from outside the area, whether from agencies or special interest groups.

Public comment on the Wales Creek WSA was split. Reasons supporting wilderness designation included the area's unique scientific value as a lowland drainage, its wildlife values, the scarcity of undisturbed environments in the Garnet Mountain Range, and its quality wilderness characteristics. Those who opposed wilderness designation pointed out the existence of proven mineral potential and historic mining activity, potential oil and gas resources, restrictions on forest insect control, restrictions on snowmobile and vehicle use, the need to manage timber resources, and the abundance of existing wilderness areas. Several individuals who supported wilderness classification favored dropping the southern portion of the WSA.

The economy of the immediate area is largely based on the agriculture and forest industries. Timber harvesting has not occurred in the WSA to date.

The greatest use of the WSA is for recreation. An estimated 430 visitors, primarily elk hunters from the Missoula area, use the WSA each year. This use represents about $12,900 per year in expenditures.

Lands

There are no corridors, easements or other realty developments in the WSA.

The Northern Tier Pipeline applied for a right-of-way over public lands in 1977. Among the alternative routes proposed, one passed through the Wales Creek drainage. As a result, the wilderness inventory for the Wales Creek WSA was accelerated. The draft EIS for the pipeline was issued in January 1979, and public comment was gathered on the alternative routes. The alternative that passed through Wales Creek was modified to pass just south of the WSA and was adopted as the preferred alternative of the final EIS. In 1983, however, the Northern Tier project was abandoned.

The Western Region Corridor Study in 1986 did not show any existing or planned corridors for the WSA. Because of rugged topographic relief and a lack of suitable sites, the potential for utility corridors is low.

HOODOO MOUNTAIN WSA (MT-074-151A)

General Description

The Hoodoo Mountain WSA is located in Powell County in the Garnet Mountain Range, approximately 16 miles northeast of Drummond, Montana. The WSA contains no inholdings and is surrounded by state and private tracts and other BLM lands (see Hoodoo Mountain Land Status Map, Chapter 1).

Wilderness Resources

Size

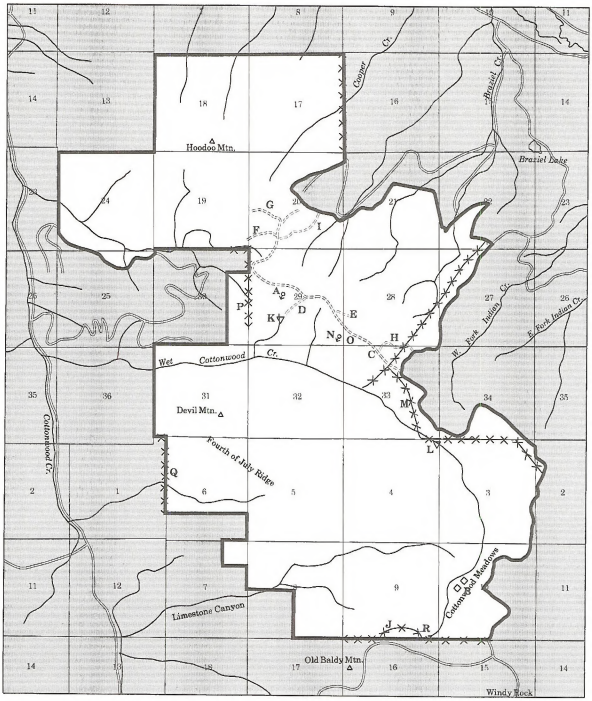
The Hoodoo Mountain WSA is 11,380 acres of public land.

Naturalness

Hoodoo Mountain appears to be natural and to have been affected primarily by the forces of nature. Signs of past human presence include a complex of two-track vehicle ways and spurs, two old cabins, livestock grazing improvements (consisting of fences and two developed springs) and two undeveloped recreation sites. These facilities are detailed in Table 3-7 and shown on the Existing Facilities Map.

Outstanding Opportunities

The WSA is forested with Douglas fir, lodgepole pine and some alpine fir. The only extensive open areas consist of intermittent grassland parks, rock outcrops along the ridges, and wet meadows in the drainages. The combination of dense forests and topographic relief provides a natural screening which affords the visitor some level of seclusion. From higher vantage points a visitor can see traffic on State Highway 141 and boaters on Nevada Lake but the one- to two-mile distance from the borders of the WSA is enough to relegate most impacts to background influence.



WSA Boundary	
Fence	
Recreation Development	
Cabin	
Spring Development	

Map Key	Feature
A	Old Camp Spring
B	2 Old Cabins
C	Vehicle Way 4
D	Spur 4a
E	Spur 4b
F	Spur 4c
G	Spur 4d
H	Vehicle Way 3
I	Vehicle Way 8
J	Vehicle Way 10
K	Recreation Development Old Camp Cr.
L	Recreation Development
M	Range Fence
N	Spring Development (Unnamed)
O	Spurs (Not numbered)
P	Line Fence
Q	Line Fence
R	Fence
	Unimproved Road or Vehicle Way

HOODOO MOUNTAIN EXISTING FACILITIES MAP

1:63,360

NORTH

0 1 Miles 2

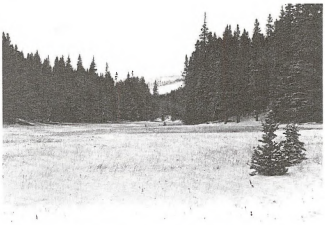
0 1 Kilometers 2 3

TABLE 3-7
MANMADE FACILITIES ON THE HOODOO WSA

Map Key	Feature	Legal Location	Length/Area	Remarks
A	Old Camp Spring	T12N, R10W Sec. 29 SE 1/4 NW 1/4	Under 1 ac.	Developed livestock spring.
B	2 old cabins	T11N, R10W Sec. 10 NW 1/4	Under 1 ac.	Logs rotting away. Site mostly revegetated.
C	Vehicle Way 4	T12N, R10W Sec. 28, 29, 30 & 33	Approx. 2-1/2 mi.	2-wheel track with vegetated midstrip. Mostly screened by dense forest cover except when passes thru meadows.
D	Spur 4a	T12N, R10W Sec. 28	Approx. 120 yds.	Short spur to Vehicle Way 4.
E	Spur 4b	T12N, R10W Sec. 28 and 29	Approx. 50 yds.	Spur to Vehicle Way 4.
F	Spur 4c	T12N, R10W Sec. 19 and 20	Approx. 1/4 mi.	Spur to Vehicle Way 4.
G	Spur 4d	T12N, R10W Sec. 20	Approx. 150 yds.	Spur to Vehicle Way
H	Vehicle Way 3	T12N, R10W Sec. 33	Approx. 1/2 mi	2-wheel track with vegetated strip. Some light maintenance has been done.
I	Vehicle Way 8	T12N, R10W Sec. 20	Approx. 3/4 mi.	Some light improvements. Little use. 2-wheel track.
J	Vehicle Way 10	T12N, R10W Sec. 9	Approx. 100 yds.	2-wheel track. Mostly revegetated.
K	Recreation Development (Old Camp Cr.)	T12N, R10W Sec. 29	Under 1 ac.	Fire rings.
L	Recreation Development (Green Park)	T11N, R10W Sec. 4	Under 1 ac.	Fire rings.
M	Range fence	T12N, R10W Sec. 22, 27, 28, 29, 33, & 34; T11N, R10W Sec. 3	Approx. 7 mi.	Well screened by forest cover.
N	Spring Development (Unnamed)	T12N, R10W Sec. 29 SE 1/4 SE 1/4		
O	Spurs (not numbered)	T12N, R10W Sec. 28, 29 T12N, R10W Sec. 29 SE 1/4 NW 1/4	Approx. 1/4 mi. Approx. 1/8 mi.	Spur to Gobbler Knob. Spur to Old Camp Spring.
P	Line fence	T12N, R10W Sec. 17	Approx. 1 mi.	
Q	Line fence	T11N, R10W Sec. 6 T12N, R10W Sec. 31	Approx. 1-1/4 mi.	
R	Fence	T11N, R10W Sec. 9 and 10	Approx. 1-3/4	Runs along section line and road.

The Hoodoo WSA's irregular, linear configuration and three-fourths-mile to three-mile core-to-perimeter distances limit opportunities for solitude. Topographic and vegetative screening afford opportunities for solitude on portions of the WSA.

Hoodoo Mountain's dense forests and interspersed wet meadows (along Wet Cottonwood Creek) and upland parks provide excellent habitat for a variety of wildlife. Habitat quality affords the potential for excellent hunting, wildlife observation and nature study. However, fair to poor access limits the realization of that potential. Unmaintained trail segments similar to those in Wales Creek WSA afford some opportunities for day hiking, cross-country skiing, and snowshoeing. Opportunities for fishing, camping, photography, and horseback riding also exist. In summary, within the boundaries of Hoodoo WSA there are some opportunities for primitive and unconfined recreational activities.



Cottonwood Meadow in Hoodoo Mountain WSA

Supplemental Values

The WSA contains many features of ecological value such as the densely forested areas, open grassland parks, meadows, and small creeks that provide excellent habitat for a wide range of wildlife such as elk, mule deer, white-tailed deer, black bear, porcupine, grouse, eagles, hawks, and other nongame species. It is believed that marten, fisher, and wolverine use the WSA. Remnants of old foot trails made by the Blackfoot Forestry Protective Association (BFPA) and livestock herders and the two log cabins may have historical value.

Ecosystem Representation

The WSA contains three ecotypes. The Douglas fir forest makes up 12 percent of the WSA; western spruce and fir forest, 62 percent; and alpine meadows and barren, 26 percent. All are well represented in existing wilderness areas.

Hoodoo Mountain lies in an area where, generally, large amounts of national forest lands have been designated as wilderness. Several more areas have been recommended for wilderness.

Summary of Wilderness Quality

The irregular shape of the WSA limits opportunities for solitude, and the WSA is, to some degree, impacted by nearby human activity. These problems are minimized somewhat by physiographic and vegetative screening which enhance, to some extent, the values of solitude and naturalness. Portions of the WSA do provide opportunities for solitude, naturalness and primitive recreation.

Forest Resources

Hoodoo Mountain WSA contains 9,078 acres of Commercial Forest Land (see Forest and Riparian Map). Approximately 1,000 acres of CFL are in the 1,700-acre special management area (upper Wet Cottonwood Creek) and approximately 8,000 acres are in the remaining 9,680 acres of the WSA. It also contains 1,983 acres of noncommercial forest land that, although forested, is extremely low in timber productivity or is impractical to harvest due to the presence of extensive rock outcrops. Hoodoo Mountain also has 319 acres of nonforested talus slope and meadow land. Most of the CFL could be cut without special management but 2,402 acres would require special harvest systems to avoid environmental degradation. The WSA lacks good physical access; therefore, if the area is logged, haul roads would have to be constructed. The WSA has an estimated timber harvest potential averaging 635,000 board feet per year (635 mbf/year) sustainable yield. Approximately 100 mbf are in the upper Wet Cottonwood Creek Special Management Area, and 535 mbf are in the remaining 9,680 acres of the WSA.

A timber trespass that occurred during 1987 in T11N, R10W, Sections 6 and 7 removed all merchantable trees from approximately 20 acres of the WSA. The case was resolved and the area has since been replanted. Furthermore, the WSA northern boundary borders on timber cutting units in Sections 20, 21 and 22 of T11N, R10W.

Timber species by acreage in the WSA include 9,817 acres of lodgepole pine, 1,207 acres of Douglas fir, and 37 acres of Engelmann spruce.

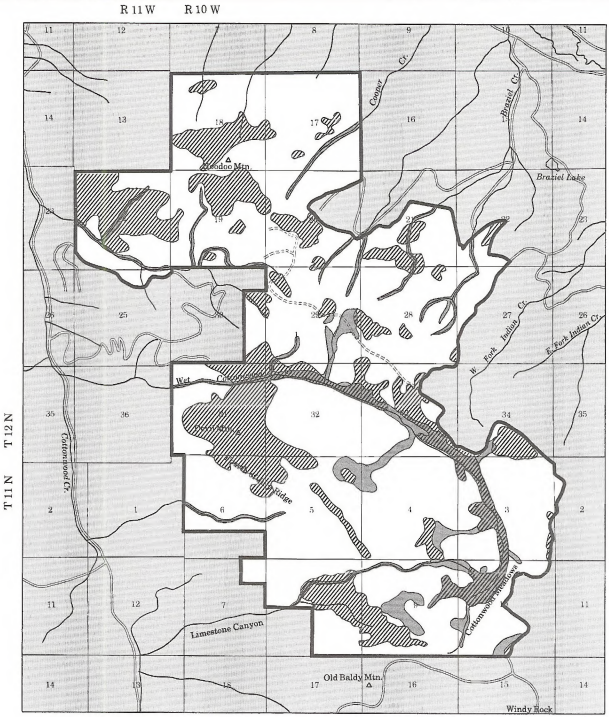
Energy and Minerals Resources

Hoodoo Mountain WSA is in the Montana Overthrust Belt. Its bedrock consists of a thick series of old sedimentary rocks that are folded and faulted. Plutons of igneous rocks intrude the older units. Younger extrusive volcanic rocks cover large parts of the WSA. The geological setting of the WSA is similar to the metal-producing regions in the western part of the Garnet RA. Those portions of the WSA underlain by Paleozoic or Precambrian strata are classified as having moderate favorability for metallic minerals based on limited direct evidence (see the GEM cited under Energy and Minerals Resources for Wales Creek WSA). The remainder of the WSA is classified as having low favorability for metallic minerals based on indirect evidence. The WSA is classified as having low favorability for other locatable mineral resources based on limited direct evidence. Two unpatented gold claims were filed in Braziel Creek, but one was abandoned in 1985 and the other in 1988. Table 3-8 and the Minerals Map provide the locations, size and dates of abandonment for the two claims. Under the 43 CFR 3802 regulations, unpatented mining claims are regulated to prevent impairments that would make the area unsuitable for wilderness designation.

TABLE 3-8
HOODOO MOUNTAIN WSA METALLIC MINERAL
(GOLD & SILVER) CLAIMS

Location	Number of Claims	Approx. Acreage	Current Status
T. 12 N., R. 10 W., Sec. 21	1	20	Abandoned 07/13/88
Sec. 22, SW1/4	1	20	Abandoned 05/20/85

Prior to a moratorium on oil and gas leasing in WSAs (issued Dec. 30, 1982) the area had 1,340 acres under post-FLPMA leases; the remainder was under lease application. Since the moratorium, the leases and applications have been adjudicated and abandoned. All the leases were closed by 03/29/88 (see Table 3-9). Until a determination is made concerning management status of the WSA (wilderness/nonwilderness), no leasing will occur due to the moratorium.



HOODOO MOUNTAIN FOREST AND RIPARIAN MAP

1:63,360

NORTH

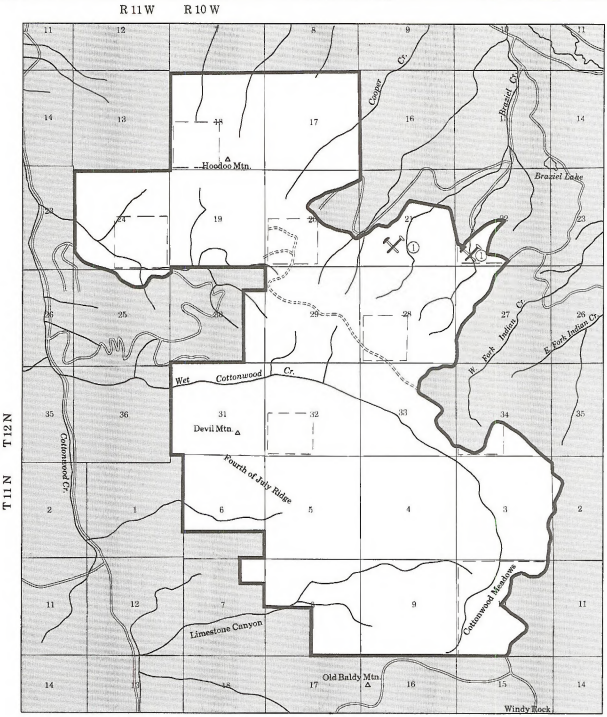
0 1 Miles 2

0 1 Kilometers 2 3

Noncommercial Forest Areas

Commercial Forest Areas

Riparian



WSA Boundary

Areas leased for Oil & Gas (post FLPMA leases)

Section containing mining claim

Number of claims in each section

HOODOO MOUNTAIN MINERALS MAP

1:63,360

NORTH

0 1 Miles 2

0 1 Kilometers 2 3

TABLE 3-9
HOODOO MOUNTAIN WSA - POST FLPMA
OIL AND GAS LEASES[1]

Location	Lease Number	Date of Lease	Current Status
T. 11 N., R. 10 W.,			
Sec. 10, All	M45442	09-24-85	Closed 02/12/88
T. 12 N., R. 10 W.,			
Sec. 18, SW1/4	M39816	09/24/85	Closed 03/29/88
Sec. 20, SW1/4	"		
Sec. 22, SW1/4	"		
Sec. 28, SW1/4	"		
Sec. 32, SW1/4	"		
Sec. 34, SW1/4	"		
T. 12 N., R. 11 W.,			
Sec. 24, SE1/4	M39817	09/24/85	Closed 03/29/88

[1]There are no pre FLPMA leases. All leases are covered under wilderness stipulations.

The WSA is classified as having low favorability for oil and gas based on limited direct evidence. The classification is based on the generally unfavorable setting of the WSA as compared with known hydrocarbon-producing areas in the Overthrust Belt (see GEM Resources Assessment). Other leasable minerals are classified as unfavorable (geothermal) or having low favorability based on direct and limited direct evidence.

There is a low probability for discovering developable deposits or concentrations of metallic mineral and oil and gas resources in the WSA. This prediction is based on little to no current and historic activity, and the moderate to low potential for discovering mineral and energy resources.

Wildlife and Fisheries Resources

Threatened/Endangered Species

There are no known occupied, critical, or essential threatened and endangered species habitats in the Hoodoo Mountain WSA.

Big Game Species

Moose occur yearlong on the WSA in small numbers (estimated at 5 to 10 animals). The mesic meadows along Wet Cottonwood Creek are important habitat components for moose largely because of their willow component.

The WSA is prime summer/fall elk habitat. Its predominant timber type provides a large block of security habitat. In addition, open areas are scattered throughout the WSA. These vary from xeric mountain parks to mesic meadows associated with Wet Cottonwood Creek. The wet meadows are an important habitat component in that they provide succulent forage late into the growing season, wallow sites for relief from ectoparasites and insects, and cool bedding areas. The mesic meadows provide early to mid-season forage areas. Some early winter and late spring use may occur in small areas during mild seasonal weather patterns. The patterns and amounts of hiding cover and forage in the WSA create favorable summer and fall habitat for elk. Accurate population data for elk are not available but the number of animals using the WSA and adjacent areas is estimated at approximately 250 to 350. The Wildlife and Fisheries Habitat Map shows the locations of known elk wallows and big game winter ranges.

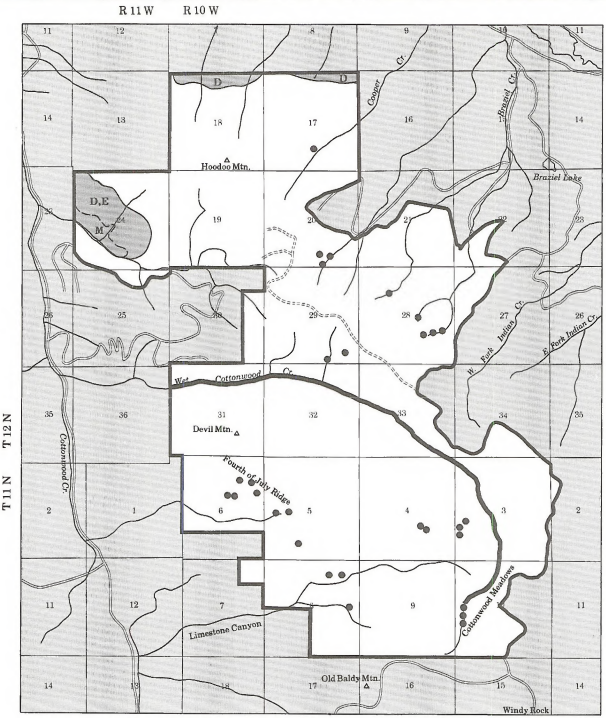
Mule deer are dispersed throughout the WSA from late spring through fall. Little or no wintering activity is found. Although there is a lack of accurate census data, the number of animals using the area is estimated at approximately 100 to 150.

Black bear occur in the WSA, but densities appear to be low.

Elk in Garnet Resource Area

Other Species

Cutthroat trout are present in Dry and Wet Cottonwood Creeks in limited numbers and size. Fishing pressure is low in the WSA. The Wildlife and Fisheries Habitat Map shows the streams that support fisheries.



WSA Boundary

Winter Range

E — Elk

D — Deer

M — Moose

Stream with Fisheries

Wallow

HOODOO MOUNTAIN WILDLIFE AND FISHERIES HABITAT MAP

1:63,360

NORTH

0 1 Miles 2

0 1 Kilometers 2 3

Range Resources

A large portion of the WSA is under lease for livestock grazing under the terms of the Braziel Creek AMP (7207) and Devil Mountain Lease #7210 (see Grazing Allotment Map). The area under lease is used by livestock two out of three years at some time between July 1 and September 30. The third year the area is totally rested. Approximately 124 AUMs are licensed out of a total of 184 AUMs available within the WSA. Occasional evidence of trespass grazing can be found in Cottonwood Meadows and at the south end of Fourth of July Ridge, but such trespass is sporadic. Range improvements within the WSA consist of two spring developments and approximately seven miles of fence. Gobbler Knob Spring (T12N, R10W, Section 29) is scheduled for reconstruction in order to help control grazing trespass onto Cottonwood Meadow.

Soil and Water Resources

The WSA contains the Braziel and Wet Cottonwood Creek drainages. Channel stability analysis has been run on Braziel and Wet Cottonwood creeks. Within the WSA boundaries both stream channels appear to have only moderate resistance to damage due to increased stream flow. There is no water quality information for the reach of Wet Cottonwood Creek within the WSA. However, data from a water-quality station located below the WSA indicate that the drainage is in good condition with suspended sediment concentrations of less than 25 mg/liter in Wet Cottonwood Creek during runoff periods. Data are also unavailable for Braziel Creek within the WSA boundaries, because activities that require such monitoring have not occurred. However, in the absence of disturbance, water quality of Braziel Creek is assumed to be very good.

Belt series rock (6,400 acres), tertiary-age andesite (4,900 acres), and tertiary-age rhyolite (200 acres) occur in the WSA. Cliff and talus are occassional physiographic features of the WSA. Wet meadows and riparian zones occur along Wet Cottonwood Creek (see Forest and Riparian Area map).

Soils developed from the Belt series quartzitic material have weakly developed subhorizons with a high gravel content. These soils have a slight erosion potential and a slight to moderate compaction potential. Soils developed from tertiary-age materials have moderate gravel content and clayey subhorizons. These soils have moderate to high erosion and compaction potentials. These soils are also prone to slump problems, especially where shallow groundwater is present. An example of the type of slumping that can occur on these materials can be seen in T12N, R10W, Section 22, SW1/4.

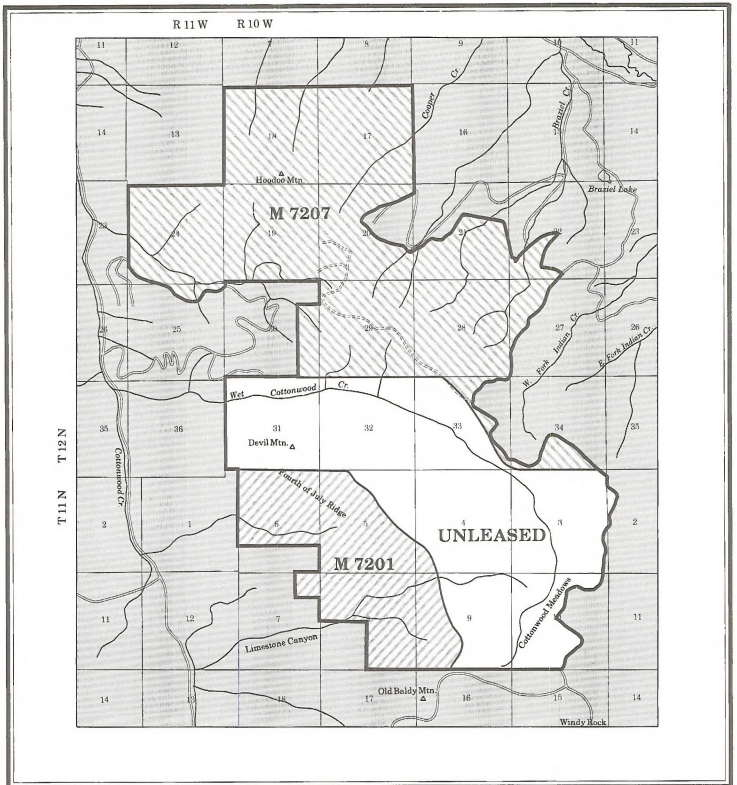
Recreation Resources

This WSA offers opportunities for sightseeing, primitive camping, horseback riding, walk-in hunting, backpacking, and day hiking. In addition, there is a limited amount of motorized vehicle use (particularly motorcycle and four-wheel drive) associated primarily with fall hunting. Snowmobile use presently occurs adjacent to the WSA and is assumed to occur (at a much lower level) within the WSA. The potential for increase is limited by the lack of more openings on the WSA.

Opportunities for photography, fishing, cross-country skiing, nature study, and rock climbing also are available.

Recreation use is limited primarily by the remoteness of the WSA and limited access. Best estimate of BLM recreation planners is approximately 200 visitor days/year.

Access to the WSA from the south is from I-90 up Carten Creek Road or Brock Creek Road to the Hoodoo Mountain Jeep Road. The Hoodoo Mountain Jeep Road forms the eastern boundary of the WSA (see Hoodoo Mountain Land Status Map in Chapter 1). It is officially open yearlong, but probably is closed to all vehicles, except snowmobiles, by snow from about mid-December to mid- May or early June. Access from the north is from Highway 141 on the Braziel Creek Road which becomes the Hoodoo Mountain Jeep Road in the vicinity of the WSA (see Hoodoo Mountain Land Status Map). There is no legal access from the east and the west. Seasonal access in the vicinity of the WSA include a logging spur road near the north boundary that is closed to all vehicles from Sept. 1 to Nov. 30; Indian Creek Road that is closed during the same time period; and Gobbler Knob Vehicle Way that is closed year-round to all motor vehicles, except snowmobiles. There are approximately 4.4 miles of vehicle way and 0.8 mile of primitive spur roads in the WSA. Access to the WSA from the west and east is limited by private lands. Motor vehicle use of the Hoodoo Mountain Jeep Road is estimated at about 1,000 visitor days/year. Of that use, approximately 20 percent (200 visitor days/year) was assumed to be associated, in some way, with the WSA. Ninety percent is assumed to be hunting use, and 10 percent attributed to other uses (sightseeing, firewood cutting, photography, etc.). The development of additional access within the WSA depends, primarily, on the demand for harvest of commercial forest lands within the WSA.


R 11 W
R 10 W
T 12 N
T 11 N
Hoodoo Mtn.
M 7207
Braziel Lake
Braziel Cr.
Cottonwood Cr.
W. Fork Indian Cr.
E. Fork Indian Cr.
West Cottonwood Cr.
Devil Mtn.
Fourth of July Ridge
UNLEASED
M 7201
Cottonwood Meadows
Limestone Canyon
Old Baldy Mtn.
Windy Rock
WSA Boundary
M 7201 Devil Mountain
Season of Use 6/16 — 10/15
Class of Livestock — Cattle
M 7207 Braziel Creek
Season of Use 7/1 — 9/30
Class of Livestock — Cattle
HOODOO MOUNTAIN
ALLOTMENT MAP
1:63,360
NORTH
Miles
Kilometers

Snowmobile use by local residents occurs on and adjacent to the WSA, along existing roads and jeep trails. Most of the snowmobile use would probably occur on the Hoodoo Mountain Jeep Road and the Indian Creek Road. That use is thought to be low, estimated at no more than 100 visitor days/year in the vicinity of the WSA. Infrequent and occasional snowmobile use may occur on the Gobbler Knob Vehicle Way, estimated at approximately 15 percent of that occurring adjacent to the WSA (15 visitor days/year). There is no developed trail system such as that associated with Wales Creek WSA, and with the current demand no designated trail is anticipated. A significant increase could be expected with logging in the WSA because of new openings (cutting units and roads) being provided.

Fall hunting provides the primary recreational use of Hoodoo Mountain WSA. Best estimate is that 90 percent of the motor vehicle use along the WSA boundary would be hunting (180 visitor days/year). The WSA is part of the West Fork Braziel Creek/Gobbler's Knob/Cottonwood Creek walk-in hunting area which contains 15,000 acres, including 12,000 acres of public lands. However, a much larger area is effectively closed to vehicular traffic because of limited access through private lands north and west of the WSA. Because the WSA is designated for walk-in use, motor vehicles are restricted to its perimeter. Walk-in hunting is estimated at 90 percent (165 hunter days/year) of the hunting use.

The WSA has an undeveloped trail system consisting of disconnected remnents of BFPA and livestock herding trails. Overall length of the trail segments is estimated at 5 to 6 miles. Signs of use (clear tree blazes, names and dates penciled on old signs, distinctive tread) suggest that as much as 50 percent of the walk-in hunting use (nearly 85 hunter days/year) is associated with the trail segments. Segments of old trails have been discovered in Gallagher Creek drainage and the Mannix Park and Windy Rock areas south of Gallagher Creek, as well as in the WSA. All known segments of old trails could be restored to form a scenic trail system of approximately 20 to 25 miles (Wet Cottonwood Creek/Lost Creek/Gallagher Creek/Mannix Park/Windy Rock area).

Two small recreation sites exist in the WSA. Both are undeveloped and are used primarily by hunters during the fall hunting season (see Existing Facilities Map under Wilderness Resources). Primitive camping is guessed at no more than 40 use days/year, and all of that is assumed to be directly related to hunting.

Hoodoo Mountain WSA is classified as a VRM Class I area. Resources Management (VRM) classes are described in Appendix F of the Garnet Resource Area RMP/EIS.

Cultural Resources

A limited cultural resource inventory indicates the Hoodoo Mountain WSA has been used over the last 10,000 years. The mountain climate (termperatures and snowfall) of the Hoodoos limits human occupation to the period from late spring to early fall. The one site recorded to date was located in a resource concentration area, and it dates to the Early Middle Period. This finding would suggest the WSA could function as an area for testing hypotheses on prehistoric subsistence strategies.

The lack of economically recoverable precious metals prohibited the development of a mining industry. Historically, the primary use of the WSA was as summer forage for domestic sheep and later for cattle grazing. Hunting was also an important historical use.

Social and Economic Conditions

The WSA is located entirely within Powell County. The economy of Powell County is based on agriculture (primarily livestock and hay production) and timber. Although timber resources are important in this area, timber industry employment is more predominant in neighboring counties such as Missoula County. At present, recreation is the primary use of the Hoodoo Mountain WSA. The WSA receives approximately 200 visitors per year, primarily hunters. At the average expenditure of $30 per day for hunting in Montana, hunters contribute approximately $6,000 per year to the local economy.

The results of a 1984 statewide wilderness opinion poll and the attitudes and values of area residents described for the Wales Creek WSA apply equally as well here.

Public comment on this WSA was split. Those who were against wilderness designation underlined the value of its timber and the abundance of designated wilderness in Montana. Some identified the presence of human impacts in the form of fences, spring developments, stock driveways, recreation campsites, and vehicle ways. However, of these, several also indicated that these developments did not detract from the naturalness or opportunities for solitude and primitive recreation.

Proponents of wilderness designation pointed out the old sheep trails, outstanding natural beauty, and the presence of wolverine, marten, and fisher, as well as a variety of the more common wildlife species. Cottonwood Meadows was identi-

fied as a special attraction. Several also noted that the WSA has the ability to revert easily to a natural condition.

Lands

There are no corridors, easements or other realty developments in the WSA.

The Western Region Corridor Study in 1986 did not show any existing or planned corridors for the WSA. Because of rugged topographic relief and a lack of suitable sites, the potential for utility corridors is low.

QUIGG WEST 202 WSA

General Description

Quigg West lies adjacent to the 60,500-acre Forest Service RARE II Area, Quigg (Q-1807). The 202 WSA is located 20 miles west of Philipsburg, Montana, in Granite County. It contains no inholdings and is surrounded by private and national forest lands.

Wilderness Resources

Size

Quigg West contains 520 acres of public lands.

Naturalness

Quigg West is completely natural in character with human impacts, past or present, unnoticeable. The only human imprints on the landscape are two footpaths, one in each of the two drainages. However, these paths are often untraceable and are believed to be game trails, which make them part of the natural habitat of the native fauna. The lack of continuity of both trails precludes their consideration as significant impacts in any context. The WSA as a whole appears untouched by humans and is in a totally natural state.

Outstanding Opportunities

The topographic relief and vegetative cover of Quigg West enhance its solitude opportunities. Two drainages, Capron Creek and Sheep Gulch, transect the WSA. The steep side slopes are interspersed with coniferous forest cover and open talus areas while the tops of the ridges between and around the drainages are primarily Douglas fir forest. The boundaries are irregular, following public ownership boundaries. Core-to-perimeter distances are as little as 200 yards and as much as three-fourths of a mile.

Quigg West does offer outstanding opportunities for solitude in conjunction with the Forest Service RARE II area. The steep slopes of the two drainages keep visibility restricted to the user's immediate area. On the ridge the vegetation is dense enough to limit a visitor's ability to see others. The drainages themselves are not only densely vegetated but also have bends and turns in them that effectively isolate people from one another. The WSA however, is too small to provide outstanding solitude as an individual unit. Its value lies in the enhanced solitude and varied terrain it provides for users of the Forest Service Quigg RARE II area.

The WSA also offers opportunities for primitive or unconfined types of recreation. The topography is quite steep for travel by foot or horseback, and the vegetation in the drainages

Lower End of Sheep Gulch

Lower End of Capron Creek

is dense enough to make travel difficult and at times almost unpleasant. Those opportunities that do exist are for hiking, backpacking, and hunting. The opportunities for these activities are less than outstanding, primarily due to the limited access.

Supplemental Values

Quigg West provides critical yearlong range for bighorn sheep as well as for elk and mule deer.

Ecosystem Representation

Quigg West consists of three ecotypes. Douglas fir forest makes up 72 percent; western spruce and fir forest, 5 percent; and alpine meadows and barren, 23 percent. All are well represented in existing wilderness areas.

Summary of Wilderness Quality

Quigg West is pristine and would provide outstanding opportunities for solitude and for primitive recreation in conjunction with the Forest Service RARE II Quigg area.

Forest Resources

The WSA contains 284 acres of Commercial Forest Land (see Forest and Riparian Map). It also contains 214 acres of noncommercial forest land that although forested, is low in timber productivity or is impractical to harvest due to the presence of extensive rock outcroppings. Quigg West also has 22 acres of nonforested talus slope or meadow land. Due to the steep topography, only 22 acres could be cut using conventional harvest techniques. The remainder would require special harvest systems. The WSA lacks access roads; therefore, to be logged, haul roads would have to be constructed. The WSA has an estimated timber harvest potential averaging 15 mbf/year sustainable yield.

Timber species by acreage in the area include 434 acres of lodgepole pine and 64 acres of Douglas fir.

Energy and Minerals Resources

The WSA is within the Montana Overthrust Belt, a region in which the rocks have been thrust eastward over one another to form repeating stacks of units. The bedrock consists of old sedimentary rocks that have been intruded by younger rocks. The bedrock is capped by stream, lake and glacial sediments and locally by young volcanic rocks.

The area surrounding the WSA is in a mineralized region. The Philipsburg Mining District is located to the east, and the Black Pine Mine (copper, silver, and tungsten) is ten miles to the northeast. Placer gold occurs in many of the streams, and there is one small, inactive gold/silver lode mine nearby. U.S. Geological Survey geochemical data show a strong barium anomaly in one stream draining from Quigg West. Barium is commonly associated with gold in the area. In addition, parts of the WSA are covered by older gravels similar to gold bearing gravels on the east side of the Garnet Resource Area. Together the geochemical data and presence of older gravels indicate moderate potential for finding lode and placer gold deposits. There are no unpatented mining claims filed within the WSA. Under the 43 CFR 3802 regulations, unpatented mining claims with mineral development are regulated to prevent impairment; consequently, if any claims were located, the 3802 regulations would be applied until a determination is made regarding wilderness status..

Even with the moderate potential for occurrence, there is little probability that any metallic mineral deposits would be developed. Such prediction is based on a suspected low probability of developable deposits, cost of developing a claim and other factors.

Before 1986, 200 acres of this WSA were under a post-FLPMA oil and gas lease, and the remainder was under lease application. The lease was closed on 04/07/86. It is described in Table 3-10 and shown on the Minerals Map. Any applications that may remain would not be leased because of the present moratorium in wilderness study areas.

The geologic environment in Quigg West and interpretation of available geochemical data indicate a low probability for finding uranium, geothermal resources and oil and gas.

TABLE 3-10
QUIGG WEST WSA - POST FLPMA
OIL AND GAS LEASES[1]

Location	Lease Number	Date of Lease	Current Status
T. 7 N., R. 16 W., Sec. 8, NW1/4 NE1/4 and NW1/4	M51146	11-01-85	Closed 04/07/86

[1]There are no pre FLPMA leases. All leases are covered under wilderness stipulations.

QUIGG WEST FOREST AND RIPARIAN MAP

WSA Boundary

3 Commercial Forest Land

7 Non-Commercial Forest Land

13 Non-Forested Land

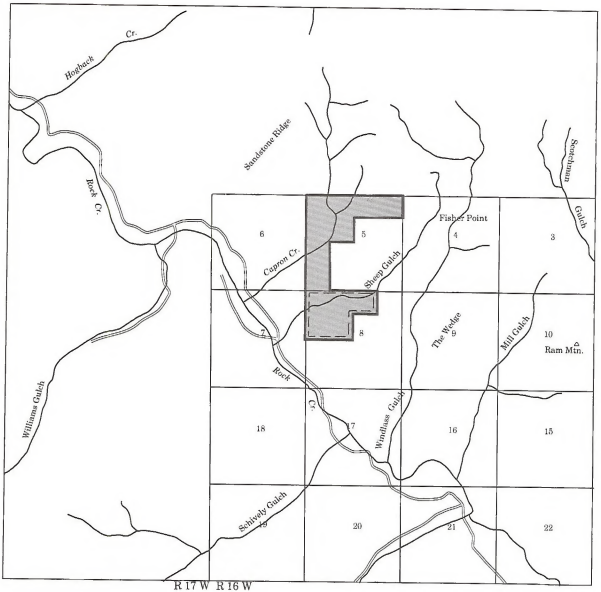
Riparian

NORTH

0 1 2 Miles

0 1 2 3 Kilometers

1:63,360



WSA Boundary

WSA

Oil & Gas Lease (Post FLPMA lease)

QUIGG WEST MINERALS MAP

NORTH

0 1 2 Miles

0 1 2 3 Kilometers

1:63,360

Wildlife and Fisheries Resources

Threatened and Endangered Species

There are no known occupied, critical, or essential threatened or endangered species habitats on the Quigg West WSA.

Big Game Species

All but about the northern 20 percent of the WSA is designated as winter range for bighorn sheep, elk and deer (see Big Game Winter Range Map).

Fingers and pockets of timber intermixed with mountain parklands provide excellent habitat for elk and mule deer from late spring through fall. Elk and mule deer habitat is contiguous with that of adjacent Forest Service and private lands. Census figures are not available to accurately state population levels of elk and deer; however, numbers are estimated at 200 animals of each species.

Bighorn sheep make seasonal use of the WSA as part of the distribution area for the Ram Mountain herd (approximately 170 animals).

Black bear are common and have been observed on the grassland habitat type. There are no census data with which to estimate numbers.

Bighorn Rams in the Rock Creek Area

Other Species

No fisheries are present.

Management goals for wildlife in the WSA would be aligned with the Forest Service goals for the larger Quigg RARE II area should the two areas be designated wilderness.

Range Resources

This small WSA is not leased for livestock grazing. Occasional trespass horse use has been noted, but is sporadic. The WSA has an estimated capacity of 20 AUMs.

Soil and Water Resources

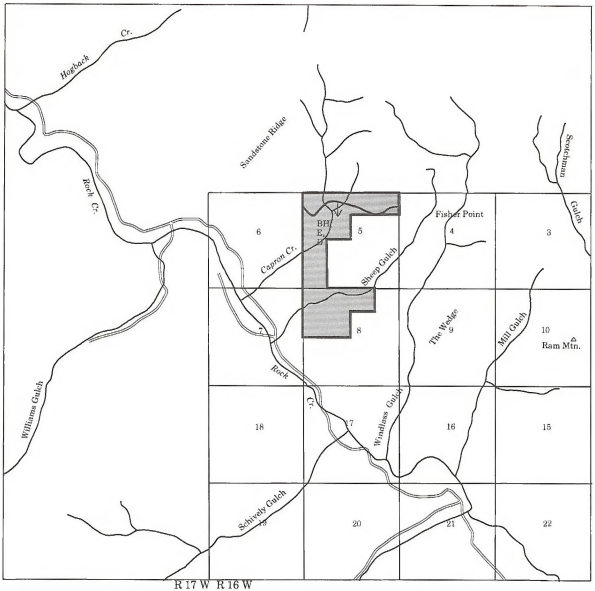
Most of the soils are derived from Belt series (quartzitic) rock. Much of the WSA is rock outcrop and the remainder is largely soils with weakly developed subhorizons and high gravel content. These soils are stable with a low erosion potential and a slight to moderate compaction potential. A few small areas have soils formed in the tertiary age gravels. These soils generally have a moderate erosion potential and a moderate to severe compaction potential.

Stream-reach inventory and water-quality data are not available. Other areas in the Garnet Resource Area with similar bedrock geology and soils have streams with high water quality, especially in the undisturbed state, and channels that are highly resistant to erosion. The same is assumed to be true for Sheep Gulch and Capron Creek. Sensitive riparian areas have not been identified, although below the WSA both drainages empty directly into Rock Creek, which is a high quality riparian area and blue-ribbon trout stream.

Recreation Resources

The primary recreational activity in Quigg West is big game hunting in the fall. The WSA provides some dispersed recreation in the form of hiking and horseback riding, but does not receive a large amount of use. Lack of designated trails could be one factor in limiting those types of uses. The best estimate of BLM recreational planners indicates that approximately 25 visitors use the WSA each year, all of which is assumed to be hunting related.

There are no roads or other vehicle ways nor any constructed recreational facilities in the WSA. Because of its rugged terrain, the WSA is managed as a road closure area. It could be considered a noncontiguous, westward extension of the informally designated Ram Mountain walk-in hunting area. Topographical relief and private lands limit vehicle travel in the general Ram Mountain area. Legal vehicle access (for administrative use only) is restricted to Scotchmans Gulch at the NE corner of the walk-in hunting area. The rugged terrain and the absence of internal trails and intervening private lands essentially preclude developments for motorized vehicle use



WSA Boundary

Winter Range

BH Bighorn Sheep

E Elk

D Deer

QUIGG WEST
BIG GAME WINTER RANGE MAP

NORTH

0 1 2 Miles

0 1 2 3 Kilometers

1:63,360

on the WSA. Based on topography and lack of motor vehicle access, ORV use is assumed to be negligible or nonexistent.

Quigg West is classified in VRM Class I (see Appendix F of the Garnet RMP/EIS for VRM classifications).

Cultural Resources

Although no cultural resource inventory has occurred within the Quigg West WSA intensive inventory has occurred on BLM-managed lands immediately to the east. Based on this inventory and the prehistoric and historic site orientation patterns observed, it is unlikely this small, rugged area will contain any cultural resources.

Social and Economic Conditions

This WSA lies entirely within Granite County. The county is rural with the economy made up of agriculture (primarily livestock grazing and hay production), mining and timber production. Presently, no grazing or timber harvest takes place in the WSA. Current use of the WSA is largely, if not entirely, recreation.

The results of a 1984 statewide wilderness opinion poll and the attitudes and values of area residents described for the Wales Creek WSA apply equally as well here.

The local economic setting is the same as that of Wales Creek. Quigg West attracts 25 visitor days which contribute approximately $750 to the local economy.

Most public comment to date has favored wilderness designation. Supporters cited old-growth timber stands, bighorn sheep populations, wildlife protection and enhancement of the values on the adjacent Forest Service RARE II area as reasons to designate Quigg West as wilderness. Those who opposed wilderness designation pointed to conflicts with timber and minerals extraction industries, and to discrimination against those who prefer to use vehicles for their recreation.

Lands

There are no corridors, easements or other realty developments in the WSA.

The Western Region Corridor Study in 1986 did not show any existing or planned corridors for the WSA. Because of rugged topographic relief and a lack of suitable sites, the potential for utility corridors is low.

CHAPTER 4
ENVIRONMENTAL CONSEQUENCES

This chapter evaluates the environmental, and economic impacts of the actions described in Chapter 2 on the resource values identified in Chapter 3. The environmental consequences of each alternative are analyzed for each WSA.

WALES CREEK WSA

PROPOSED ACTION (NO WILDERNESS/ NO ACTION) ALTERNATIVE

Effects on Wilderness Values

None of the 11,580-acre WSA would be designated as wilderness. However, the Garnet RMP designated part of the WSA, the 4,900-acre Wales Creek drainage area as a Special Management Area (MA 9). Under this designation, the special or unique features of the area would be protected by special management guidelines for the life of the RMP. The remainder of the WSA (6,680 acres) would be open to multiple-use management, as prescribed in the Garnet RMP/EIS or as projected in Chapter 2 of this EIS.

Solitude

Continued motor vehicle use of Wales Creek Fire Road would impact the solitude of the 4,900-acre Wales Creek Special Management Area (MA 9). The effects of vehicle traffic would be concentrated during the period mid-September through November, generally corresponding with the hunting season (about 85 percent of the 470 visitor days of vehicle use is assumed to be hunting related). Motor vehicle use of the Wales Creek Fire Road (estimated at 100 vehicles annually) is almost negligible compared to use of the main Garnet Range Road. Snowmobile use (estimated at about 20 snowmobile use days/year) is light compared to use of the designated snowmobile trail in the vicinity. The levels of motor vehicle and snowmobile uses are not expected to increase appreciably. Topographic and vegetative screening reduce the extent of motor vehicle impacts on the Wales Creek area. Penetration of vehicle sounds is assumed to average approximately 1 mile with the existing vegetation and topography. Solitude on approximately 2,900 acres of the 4,900-acre special management area would be impacted by motor vehicle use (primarily during hunting season) and snowmobile use of Wales Creek Fire Road.

Logging on the 6,680 acres of the WSA available for timber harvest would impact the solitude of the Special Management Area (MA 9). When logging in Yourname Creek drainage occurred adjacent to the MA 9 boundary, it is predicted that the solitude of approximately 1,100 acres within MA 9 would be impacted. This assumes that seven cutting units would bound MA9 with 1,200 feet of each common with the south boundary of the special management area. The impacts of noise would be minimized by topographic and vegetative screening, and periods of activity would be intermittent with intervening periods of activity. Assuming that only 3 of the 14 cutting units would be logged concurrently, the impact of noise on MA9 would be further reduced.

Solitude of the 6,680 acres allocated through the RMP for multiple resource management would be disturbed by the sounds of logging, motor vehicle use (primarily during hunting season), snowmobile activities and mining. Hunting and snowmobiling would be seasonal uses; logging could be expected to occur from spring through fall (until snowfall precluded log hauling). On the occasions of motor vehicle and snowmobile use of cherrystemmed and boundary roads, vehicle sounds would impact the solitude of those portions of the 6,680 acres that are within 1 mile of the roads. The sounds of vehicle and snowmobile traffic on Wales Creek Fire Road would affect the solitude of an estimated 2,900 acres of Yourname Creek drainage. Vehicle noise on Elevation Mountain Fire Road would impact the solitude of approximately 1,280 acres in the southwestern corner of the WSA. Even though motor vehicle use of Yourname Creek Road is infrequent (private access to a cherrystemmed mining claim), occassional vehicles would impact the solitude of approximately 4,500 acres.

Saw noise, vehicles, tree removal and other features of logging would eliminate solitude opportunities on 440 acres. The sounds of logging would diminish solitude on an additional 2,000 acres adjacent to each cutting unit. Assuming that no more than 3 units would be logged concurrently, the solitude of no more than 6,000 acres would be impacted at any given time. However, it is unlikely that the sounds of logging would occur concurrently on those 3 units.

Solitude would continue to be negatively impacted on the 420 acres harvested and the 2,000-acre perception area around each cutting unit once logging is completed and snowmobiles begin to use the logging roads and clearcuts. As there is virtually no other forms of recreational use during the winter snowmobile season, impacts on solitude would be minor. There would be a loss of solitude opportunities on approximately 13 acres of the WSA from mining exploration and development. The noise associated with minerals activities would impact the solitude of approximately 2,000 acres

adjacent to each of the 2 mining and 1 exploration sites that are projected.

No oil and gas development is projected in this WSA and any potential impact would be limited to several weeks of exploration once every 10 years.

Worst case effect would be all sources of sound disturbance functioning simultaneously and spatially positioned to impact the maximum area. If that were the situation the solitude of essentially the entire 11,580 acres could be impacted. In reality, however, motor vehicle and snowmobile uses of cherrystemmed and boundary roads would be light, intermittent and seasonal. Logging noise would also be intermittent, although more frequent than motor vehicle traffic and would continue for the duration of each timber sale until precluded by snow depth. Furthermore, timber harvest entries would be spaced at 5- to 10-year intervals. Logging impacts on the solitude of the 6,680 acres allocatedfor multiple resource opportunities represent the effects of initial entry timber harvest. Reforestation of initial entry cutting units may not adequately screen the effects of future entries from other parts of the WSA. Consequently, with successive entries solitude may be affected on larger areas of perception due to the change in vegetative screening. When there is no vehicle traffic and resource management activities are halted, solitude would be reestablished.

The visual impacts on solitude would be the same as those described below for naturalness.

Naturalness

Naturalness of the 4,900-acre Wales Creek Special Management Area would generally remain intact under special management designation (MA 9). Only uses that are compatible with MA 9 objectives and guidelines would be allowed. An assumption was made that visual penetration into the WSA would be at least 100 yards because of the screening effectiveness of varying densities of tree and shrub cover. Consequently, visual intrusion of existing boundary and cherrystemmed roads currently impacts the perception of naturalness on an estimated 355 acres in MA 9. The Wales Creek Fire Road (approximately 5 miles) impacts an estimated 180 acres. The Chamberlain Mountain Road (approximately 0.75 miles) impacts an estimated 55 acres. Elevation Mountain Fire Road(approximately 4 miles) impacts an estimated 120 acres along the western edge of MA 9.

Timber harvest in Yourname Creek drainage would impact the perception of naturalness on an estimated 310 acres of MA9 (250 acres of vistas above Wales Creek and 60 acres along the southern portion of MA9 when logging occurs adjacent to the boundary). This prediction assumes 7 of the 14 cutting units would bound on MA9 with 1,200 feet common with the MA9 boundary. The naturalness of 100 acres of wet meadows along Wales Creek would be impacted by removal of encroaching timber and burning of the site.

Boundary and cherrystemmed roads would impact the perception of naturalness on an estimated 505 acres of the 6,680 acres proposed for multiple resources management. The presence of Wales Creek Fire Road impacts an estimated 180 acres. Elevation Mountain Fire Road (approximately 2 miles) impacts an estimated 70 acres in the southwest corner of the area. Yourname Creek Road (approximately 3.5 miles) impacts an estimated 255 acres.

Logging and associated activities would eliminate the natural character of approximately 440 acres of the 6,680 acres recommended for multiple resources management. (At initial entry, 14 cutting units each averaging 30 acres would be harvested, resulting in a surface disturbance of approximately 420 acres. Approximately 5 miles of road would be needed to meet first entry harvest objectives, which would amount to an additional 20 acres of surface disturbance through road construction.) The perception of naturalness would be impacted on an additional 650 acres (100 acres adjacent to the cutting units and 550 acres of vistas).

After each harvest entry, an estimated 1/3 to 1/2 of the cutting units would be control-burned to remove slash and prepare sites for replanting. That estimate is assumed to represent units with slopes greater than 40 percent, too steep for mechanical piling and burning. The locations of roads and cutting units for the initial entry are shown on the Wales Creek Developments Map - Proposed Action and Partial Wilderness Alternatives in Chapter 2.

Mining exploration and development would eliminate the natural character on an estimated 13 acres over the next 15 to 20 years. The perception of naturalness could be impacted on an estimated 30 or more additional acres, depending upon the locations of the mines.

Impacts from logging on the naturalness of the 6,680-acre multiple use area represent first entry effects. Complete regeneration of tree cover in this area takes 25 to 30 years. Consequently, the effects of logging could eventually be visible on all 6,680 acres because of various stages of tree regrowth from previous harvest entries.

Supplemental Values

The 4,900-acre Wales Creek drainage contains most of the WSA's better wilderness values. The area is key moose and elk range, containing wet meadows which are important habitat components for those animals. Thermal springs, mineral licks and elk wallows are among the special features found there. Timber is encroaching on the wet meadows and reducing their sizes. Cutting of conifer encroachment and stagnant willow stands is proposed for approximately 100 acres of wet meadows. Controlled burning would follow the cutting phase of this habitat enhancement project. The objectives are to improve the forage base for moose, elk and deer and to provide habitat conditions suitable for reestablishment of beaver on Wales Creek. Treatment of the wet meadows is expected to contribute to stabilizing current moose numbers and to influence an estimated 5 percent of the total projected increase for elk and deer.

Opportunities for Primitive and Unconfined Recreation

Existing opportunities for primitive and unconfined recreation would continue to be available within the 4,900-acre Wales Creek Special Management Area. Impacts would be caused by vehicle use, snowmobiling, and timber harvest activities outside of MA 9 but adjacent to its boundaries.

Impacts to primitive and unconfined recreation opportunities would be more significant in the 6,680 acres of the WSA proposed for multiple resource opportunities.

Areas impacted and sources of impacts would be similar to those described under solitude and naturalness.

Conclusion: Solitude values could be affected on nearly all of the 4,900-acre special management area (MA 9). Sounds of motor vehicles and snowmobiles on Wales Creek Fire Road and of timber harvest and mining activities on the 6,680 acres allocated for multiple resource management might be heard from anywhere within MA 9. Vehicle use and snowmobile use (on Wales Creek Fire Road, Elevation Mountain Fire Road and Yourname Creek Road), timber harvest and mining could affect the entire 6,680 acres allocated for multiple resource opportunities. Under worst case effect, if all of the sources of sound disturbance were acting simultaneously and positioned to affect the maximum area, solitude of the entire 11,580 acres could be impacted. More realistically, motor vehicle and snowmobile uses would be intermittent. Motor vehicle and snowmobile uses on Wales Creek Fire Road and Elevation Mountain Fire Road would be light and seasonal. Traffic on Yourname Creek would probably be lighter since it is a private access. Logging noise would be intermittent although more frequent than vehicle noise and would occur until precluded by snow depth. Future entry logging might be heard on larger areas if reforestation of earlier cutting units is inadequate to screen the sounds of harvest activities.

Natural values and the perception of naturalness would be adversely affected on an estimated maximum of 2,403 acres of the Wales Creek WSA from motor vehicle and snowmobile uses and resource management activities (timber harvest, etc.). Naturalness of the entire 6,680-acre multiple use area could eventually be impacted by future timber harvest entries because of the various stages of regeneration on earlier cutting units.

Special features would be preserved on 4,900 acres by administrative allocation of land use. Treatment of 100 acres of wet meadows would benefit moose, elk, deer and beaver, primarily. Moose numbers are expected to remain stable, while an estimated 5 percent of the projected increase in elk and deer would be attributed to the proposed habitat improvement.

Opportunities for primitive and unconfined recreation would be impacted on a scale similar to that described for solitude and naturalness. Sources of impacts would be the same; timber harvest, motor vehicle use, snowmobile use and mining. Subsequent timber harvest entries could result in a larger part of the 6,680-acre multiple use area being impacted because of various stages of regeneration on earlier cutting units.

Effects on Timber Harvest

With this alternative, about 60 percent of the Commercial Forest Land (CFL) on Wales Creek WSA would be available for timber harvest (6,400 acres outside of MA 9) as established through RPM decisions. This alternative would have no impact on an annual harvest averaging approximately 400 mbf of timber.

Conclusion: There would be no impact on timber harvest established through RMP decision.

Effects on Exploration for and Development of Metallic Minerals (Primarily Gold and Silver)

The entire 11,580 acres of the WSA would be available for mineral exploration and development. There would be no impact on continuation of mineral exploration and/or development. It is projected that an estimated 3 acres would be disturbed by exploration and 10 acres disturbed by development of 2 claims over the next 15 to 20 years.

Conclusion: There would be no impact.

Effects on Oil and Gas Exploration and Leasing

There are stipulations established through the planning process regarding surface occupancy for much of this WSA, but this alternative would not additionally impact oil and gas exploration and leasing. The entire WSA would be available for oil and gas leasing and development with stipulations established through the Garnet RMP.

Conclusion: There would be no impact.

Effects on Wildlife Habitats and Numbers

Management objectives of the entire WSA would emphasize maintenance of natural values. The Wales Creek drainage (MA 9) would be managed to maintain special, unique or natural characteristics.

The remaining 6,680 acres (MA 4 and 5) would be managed to maintain or improve summer and fall habitat for elk and other big game species (with emphasis on elk).

Big Game Species

Big game security cover would be entirely preserved on the Wales Creek Special Management Area (4,900 acres). It would become more valuable and used more by moose, elk, deer and other species as logging and other activities deplete cover features in the Yourname Creek drainage. Also the elk wallow complexes in MA 9 would be protected. Treatment to retard conifer encroachment and to stimulate vigorous grass and willow growth on approximately 100 acres of wet meadows (along Wales Creek) would maintain the present moose population and contribute to projected increases in elk and deer by up to 5 percent.

Timber harvest outside of MA 9 would increase the number of openings in an otherwise almost monotypic timber type. Timber harvest specifications would result in habitat improvement for moose, elk and deer. Cutting units would be small and spatially arranged to improve patterns of foraging areas and cover. Shrubs that establish in the openings would provide a variety of browse for all three big game species. Timber harvest would affect up to 440 acres during the period of logging activity.

Minerals and energy activities are not expected to substantially impact either the animals or their habitats because of the low levels of predicted use (disturbance of an estimated 13 acres over a 15 to 20 year period).

Motor vehicle use on open roads could have a relatively small impact during the fall hunting season, displacing the animals to more isolated portions of the WSA, primarily within the Wales Creek drainage. Snowmobile use would have a minor impact because deep snow during most years would move most of the big game animals to lower elevations. Impacts would be greatest in the seasonal overlap between the beginning of snowmobile activity and the migration of animals. Even then displacements would probably be to security areas in MA 9 until snow accumulations move the animals out of the area.

The combination of security habitat, maintenance of wet meadows and new openings produced by timber harvest would result in increases in elk and deer numbers and result in increased hunting opportunities. Elk would increase by 30 percent to between 260 and 390 animals, and deer would increase by 25 percent to between 125 and 250 animals.

Other Wildlife Species

Improvement of the wet meadow/willow communities along Wales Creek would favor reestablishment of beaver in the drainage.

Cutthroat and Brook Trout occurring in Wales Creek and Yourname Creek would not be significantly impacted. Wales Creek drainage would remain virtually undisturbed; consequently, erosion and sedimentation would not adversely affect fish habitats and numbers.

Management guidelines would prevent the effects of logging in Yourname Creek drainage from adversely affecting the stream fisheries.

Conclusion: The combination of security habitat in MA 9, habitat improvement on 100 acres of wet meadows, and new forage openings produced by logging in MAs 4 and 5, would result in elk and deer numbers increasing and moose numbers remaining at current levels. Elk would be expected to increase to between 260 and 390 animals, and deer would increase to between 125 and 250 animals.

Treatment of the 100 acres of wet meadows would produce a vegetative composition suitable for reestablishment of beaver on Wales Creek.

Effects on Recreation Uses (ORV, Snowmobile, Hunting and Primitive Recreation)

The 4,900-acre Wales Creek Special Management Area (MA 9) would be managed to preserve unique or natural values and

prevent adverse impacts from management of other resources. Non-motorized activities would be emphasized over motor vehicle use.

The remaining 6,680 acres of the WSA would be managed for a variety of forms of recreation, both motorized and non-motorized.

Motor Vehicle Use

Currently, motor vehicles have access to the WSA from the west, south and east. There is approximately 470 visitor days/year of motor vehicle use on boundary and cherrystemmed roads adjacent to the WSA but none within the WSA. An estimated 400 visitor days/year are assumed to be hunting use associated with the WSA. This use is expected to increase by 50 visitor days/year because of the increase in elk and deer numbers.

Snowmobile Use

Snowmobile use of the Wales Creek Fire Road is occasional and infrequent. Current use is estimated at 20 visitor days/year. No increase is expected as a result of this alternative.

Current snowmobile use of the Yourname Creek area is assumed to be even less than that of the Wales Creek Fire Road. Estimated use is 10 visitor days/year. A substantial increase (estimated at 150 snowmobile visitor days/year) attributed to new logging roads and clearcuts is expected to occur.

Hiking

Ninety percent of the hunting use (360 visitor days/year) is estimated to be walk-in use of the WSA. The WSA is part of a larger walk-in hunting area. A projected increase of 50 visitor days/year is anticipated as the result of a proposed trail system development.

Primitive Camping

This type of use is currently associated entirely with hunting. Current and projected uses are estimated at 10 percent of the hunting use.

Conclusion: Total recreation use would increase by an estimated 250 visitor days/year from present levels to a total of 680.

Effects on Local and National Economies

The 400 mbf average annual cut in Yourname Creek would provide approximately 4 jobs and $100,000 in salaries to the private sector. About $20,000 would be provided to the U.S. Treasury annually from timber sale receipts. There would be no change in the mineral or recreation job markets or in the ranching industry resulting from the proposed management. Increased recreation use, mainly snowmobile use and walk-in hunting, would be valued at approximately $7,500 annually. The increase is assumed to be almost entirely a dispersal of users from other local areas rather than new users to the state and area.

Conclusion: Timber management under this alternative would provide 4 jobs and $100,000 in direct salaries to the local economy, and income to the U.S. Treasury would be about $20,000 annually. The value of increased recreation use would be approximately $7,500, annually. Due to the prediction that new use would be a dispersal of users from other local areas, no impacts on local and regional economies are expected.

Effects on Fire Suppression and Management

This alternative would continue the existing management direction of using only limited suppression activities on the 4,900-acre Wales Creek area (MA 9) and on 280 acres of riparian areas within the WSA. Use of mechanized, ground-disturbing equipment would not be authorized. By not allowing timber harvest, fuel buildup would make the situation more conducive to catastrophic fire occurrence. Costs of wildfire suppression would be higher from a catastrophic fire on this area than where full suppression would be allowed. Limited access, more time required for containment and control due to the absence of ground support equipment, and greater dependence on air support would contribute to the higher costs.

Full fire suppression involving the use of mechanized (ground-disturbing) equipment would be allowed on 6,400 acres in Yourname, Pearson, and Deer Gulch drainages. Full suppression actions would reduce the potential of a catastrophic fire and reduce the threat of fire spreading onto adjacent private lands. There would be no impact on fire suppression in this part of the WSA.

Prescribed fire (broadcast burning) would be used on cutting units with slopes greater than 40 percent (estimated at 200 acres) to remove slash and prepare the site for seedling reestablishment. At each harvest entry approximately half of the cutting units would be burned. That would amount to 220 acres at initial entry.

Conclusion: Existing management plans would preclude timber harvest and limit use of mechanical equipment for fire suppression on 5,180 acres of the WSA making the area more susceptible to a large fire over 1,000 acres in size and could increase suppression costs by an indeterminable amount.

There would be no impact to fire suppression activities and to fire management on the remaining 6,400 acres of the WSA.

Prescribed fire would be used on about 1/2 of the cutting units at each harvest entry to dispose of slash and prepare the sites for seedling reestablishment.

ALL WILDERNESS ALTERNATIVE

Effects on the Wilderness Values

Wilderness designation would provide legislative protection to 11,580 acres. There would be no resource management actions (logging, mining, energy development, etc.) that would adversely affect the wilderness values of solitude, naturalness, supplemental values, and opportunities for primitive and unconfined recreation within the 11,580 acres. Users would be subjected to the sights and sounds of timber harvest, motor vehicle traffic and other activities associated with development outside the WSA, which would somewhat detract from the wilderness values (primarily solitude and naturalness).

Solitude

Under this alternative, solitude of the proposed wilderness area would be affected primarily by activities outside of the WSA. Motor vehicle and snowmobile traffic on boundary and cherrystemmed roads, timber harvest adjacent to the boundary and projected development of 2 mines within the WSA would impact the solitude of the area. The sounds of motor vehicle and snowmobile traffic on the cherrystemmed and boundary roads could impact the solitude of an estimated 8,680 acres of the proposed wilderness area that are within 1 mile of the roads. However, the disturbance would be intermittent and seasonal. Furthermore, motor vehicle and snowmobile traffic on adjacent roads is light. Consequently, the entire 8,680 acres would not be affected at one time. After the traffic has passed, solitude would be restored. When the 2 mines are being worked, the sounds of mining would impact approximately 2,000 acres around each site. The actual areas of solitude affected could vary somewhat from those projected depending upon the effectiveness of vegetative and topographic screening.

Naturalness

Exclusion of other activities such as timber harvest and new mineral exploration would minimize impacts on the current naturalness of the WSA. However, the presence and continued use of cherrystemmed and boundary roads would impact naturalness and the perception of naturalness on portions of the proposed wilderness area. Wales Creek Fire Road would impact an estimated 360 acres of the proposed wilderness that are adjacent to the road. Chamberlain Mountain Road would impact an estimated 55 acres. Elevation Mountain Fire Road would impact an estimated 190 acres. Yourname Creek Road would impact an estimated 255 acres. The perception of naturalness on an estimated 800 acres of vistas would be impacted by roads, clearcuts and other disturbances within their viewsheds. Projected development of two mining claims if found to be valid would also affect natural values and the perception of naturalness on portions of the area. The loss of natural values is projected on an estimated 10 acres from mining activities (including construction of haul roads, and removal of ore) over the next 15 to 20 years. Visual intrusion would extend beyond the 10 acres of mining disturbance, impacting an estimated 20 or more additional acres, depending upon where the mines are located.

Supplemental Values

Most of the natural values of the area - mineral licks, elk wallows, warm water springs, scenery, etc. - would be preserved under this alternative. Wildlife (specifically big game) would benefit less under wilderness designation than under special management designation with moose numbers declining by as much as 50 percent to between 12 and 15 animals, and elk and deer populations remaining stable. Proposed habitat enhancements (ie., treatment of wet meadows and forage openings produced by logging) would not be accomplished under this alternative. Instead, habitat qualities and patterns would be determined by natural processes. Deterioration of habitat quality could be expected until fire, disease or some other natural factor intervened to retard vegetative succession

Opportunities for Primitive and Unconfined Recreation

Opportunities for primitive recreation would be affected by the presence and continued use of boundary and cherrystemmed roads and by mining development much the same as described for solitude and naturalness. Notwithstanding the impacts of noise, the best opportunities for primitive recreation would be in the Wales Creek drainage which comprises the approximate northern half of the proposed wilderness.

Conclusion: The following are expected to impact the solitude of the proposed wilderness area: motor vehicle and snowmobile traffic on adjacent boundary and cherrystem roads, timber harvest adjacent to the area and mining on the area. The worst case effect would be if all of the sources of sound disturbance were acting simultaneously and positioned to affect the maximum area. If that occurred, the solitude of the entire 11,580 acres would be impacted. Most commonly, however, these activities would probably not occur simultaneously; and each activity is expected to produce an intermittent rather than a continuous noise effect. At the times or periods when resource management activities are halted, solitude would be reestablished.

Natural values and the perception of naturalness would be impacted on an estimated 890 acres by the visual intrusion of boundary and cherrystemmed roads and mining activities. An additional 800 acres of vistas could be impacted by off-site visual intrusions of roads, clearcuts and other disturbances.

Supplemental values would be largely preserved on the proposed wilderness. Some fluctuations in habitat quality would be expected, influenced by natural processes that would periodically favor and retard vegetative succession. Big game numbers are predicted to respond to fluctuations in habitat quality.

Opportunities for primitive recreation would be affected similar to the affects on solitude and naturalness would be. The best opportunities, notwithstanding the noise impacts, would be in the northern portion of the proposed wilderness area.

Effects on Timber Harvest

None of the approximately 10,850 acres of CFL would be available for timber production. The Garnet RMP/EIS allows an annual cut averaging 400 mbf/year from 6,400 acres of CFL. All timber harvest would be forgone with this alternative.

Conclusion: An annual cut averaging 400 mbf would be lost.

Effects on Exploration for and Development of Metallic Minerals (Primarily Gold and Silver)

The entire 11,580 acres would be withdrawn from new mineral exploration. Two existing claims might be developed (if found to be valid) with a projected surface disturbance estimated at 10 acres over the next 15 to 20 years. New exploration and development would not be allowed.

Conclusion: The entire area would be withdrawn from mineral entry. It is projected that up to 2 of 28 existing claims would be determined as valid and would be developed. However, wilderness designation would preclude any additional exploration and development.

There would be little to no impact since the likelihood of additional mineral development under any designation is considered low.

Effects on Oil and Gas Exploration and Leasing

Wilderness designation of the WSA would mean that 11,580 acres with moderate potential for oil and gas would not be available for future leasing. The probability of finding developable and economic quantities of oil and gas deposits on the WSA is considered low. Consequently, future activity in oil and gas exploration and development would be unlikely.

Conclusion: Closing the 11,580-acre WSA to leasing would preclude the exploration and development of potential oil and gas resources of the WSA.

The impact of wilderness designation on oil and gas development would be low since there is no projected oil and gas activity in the foreseeable future.

Effects on Wildlife Habitats and Numbers

Big Game Species

Wilderness designation would limit management of wildlife habitats to natural processes and actions that do not impair wilderness values. New forage areas resulting from timber harvest would not be developed. The 100 acres of wet meadows along Wales Creek proposed for treatment under the Proposed Action would not be treated because of equipment and prescribed fire restrictions in wilderness areas. As a result, conifer encroachment would continue until natural phenomena set it back, and willow communities would continue to stagnate and decline in vigor. The projected animal responses would be:

* moose numbers are projected to decline by as much as 1/2 their current level (to between 12 and 15 animals);
* elk and deer numbers would remain at about current levels.

There would be some increase in disturbance to wildlife because of an expected increase in primitive recreation use of 150 visitor days/year. (see Effects on Recreation Uses). Overall, this disturbance is expected to be minimal as use of the area would be well screened by the dense timber and rugged topography.

Other Wildlife Species

Reestablishment of beaver on Wales Creek would be unlikely. Wet meadows would not produce the needed willows without the treatment prescribed in the Proposed Action, or similar treatment.

There would be no adverse effect on the fisheries of either Wales Creek or Yourname Creek resulting from Bureau actions.

Conclusion: Loss of new forage areas would adversely affect numbers of big game animals using the WSA. Moose are projected to decrease by as much as 1/2 (to between 12 and 15 animals). Elk and deer numbers would probably remain at current levels.

Beaver would not be expected to reestablish in Wales Creek drainage.

There would be no impact on fisheries from wilderness designation.

Effects on Recreation Uses (ORV, Snowmobile, Hunting and Primitive Recreation)

The area would be managed for primitive non-motorized forms of recreation.

Motor Vehicle Use

Motor vehicle use would remain as currently predicted because it occurs only on boundary roads and cherrystemmed roads which would remain open. Therefore, there would not be a significant impact on the overall accessibility of the area by motor vehicles. The 400 visitor days/year of hunting use associated with the WSA is projected to continue until big game populations decrease to the point where hunter satisfaction declines. At that point hunter use would be expected to decline until natural changes in habitat allow for increases in big game numbers.

Snowmobile Use

The area would be closed to snowmobiles. However, the use would probably continue near the current level since it occurs predominantly on boundary and cherrystemmed roads. The only predicted reduction would be the loss of 10 snowmobile visitor days/year in the Yourname Creek area. Predicted increase in snowmobile use attributed to new openings provided through timber harvest (estimated at 150 snowmobile days/year) would not occur.

Hiking

Current walk-in use would likely continue. Total current use is estimated at approximately 360 visitor days/year. An additional 150 visitor days/year would be predicted in response to wilderness designation and development of a 24-mile trail system. This increase is assumed to represent a dispersal of use from nearby, heavily used wilderness areas (eg., Bob Marshall, Scapegoat, Anaconda-Pintlar, etc.) rather than new visitors to the state.

Primitive Camping

Camping use would be associated with hunting and wilderness experience. Camping associated with hunting would probably remain at an estimated 10 percent of the current hunting use. Camping associated with wilderness use would be estimated at 60 percent of that use (90 camping days/year). Total camping use under this alternative would be projected at 130 camping days/year.

Conclusion: Current motor vehicle use would continue since wilderness designation would not affect boundary and cherrystemmed roads. No increase in hunting use is expected.

The 150 snowmobile use days increase predicted under the Proposed Action would not occur under this alternative. The use on Wales Creek Fire Road (20 visitor days/year) would continue but that in the Yourname Creek area (10 visitor days/year) would be lost.

Walk-in hunting would be expected to continue at or near current levels of 360 visitor days/year. However, development of a foot trail system coupled with wilderness designation could result in an increase of 150 visitor days/year of recreational use.

Total recreation use forecast under this alternative was estimated at 570 visitor days/year, an increase of 150 visitor days/year from existing levels.

Effects on Local and National Economies

Under wilderness designation, the estimated annual cut of 400 mbf of timber under the Proposed Action would no longer be available. This represents an actual loss of approximately 4 jobs and $100,000 in salaries to the local economy. An actual loss to the U.S. Treasury of approximately $20,000 in timber sale receipts would also result. Increased recreation use on the area would have a value of approximately $4,500 annually. Because the new use is assumed to result from dispersal of users from other local areas no impact on local or regional economies is predicted.

Conclusion: Wilderness designation would cost the local economy an estimated 4 jobs and $100,000 in salaries. An actual loss to the U.S. Treasury of approximately $20,000 in timber sale receipts would also result. Increased recreation use, since it is predicted as a dispersal of existing use, would not impact local and regional economies.

Effects on Fire Suppression and Management

Historically, major fires in the area have occurred within 150-year periods, on the average. Wilderness designation and the resulting removal of the WSA from timber harvest would result in increased fuel load buildup. Furthermore, mechanical suppression methods would be restricted under wilderness designation making the situation more conducive to a catastrophic fire occurring. Restrictions placed on wildfire fighting methods (no motorized equipment, hand construction of firelines, etc.) would increase the cost and time required for containment and control. The longer time required for control would increase the possibility of a wildfire developing into a catastrophic fire (over 1,000 acres). Any wildfire that threatens human life or public property will be suppressed using any measures necessary.

Conclusion: Wilderness designation would contribute to fuel buildup, and restrict mechanical suppression making the situation more conducive to a catastrophic fire on the WSA and adjacent areas. It is not possible to project an increase in the number of major fires, but restrictions on firefighting techniques would logically result in increased suppression costs as well as fire size.

PARTIAL WILDERNESS ALTERNATIVE

Effects on Wilderness Values

The Partial Wilderness Alternative is similar to the Proposed Action. The major difference is that the 4,900-acre Wales Creek drainage (MA 8) would be protected by legislation rather than by special management designation.

Impacts on wilderness values of the remaining 6,680 acres of the WSA would be essentially the same as discussed under the Proposed Action (No Wilderness/No Action) Alternative.

Solitude

Impacts to the solitude of the proposed wilderness area would be much the same as those described for the Wales Creek Special Management Area (MA 9) under the Proposed Action. Impacts from motor vehicle and snowmobile uses of boundary and cherrystemmed roads would be the same. The effects of logging from the area recommended for nonwilderness and from outside of the WSA would also be the same.

Impacts to the solitude of the remaining 6,680 acres would be the same as described under the Proposed Action.

Naturalness

There would be little difference in the impacts on solitude under this alternative and those described for MA 9 under the Proposed Action. The 100 acres of wet meadows proposed for habitat enhancement would not be treated under this alternative, otherwise the other visual intrusions are the same as described under the Proposed Action.

Impacts to the naturalness of the 6,680 acres outside the proposed wilderness would be the same as described under the Proposed Action.

Supplemental Values

Special features (elk wallows, warm springs, etc.) would be maintained as they would under the Proposed Action. The treatment of 100 acres of wet meadows described under the Proposed Action would not occur under this alternative. As a result, moose are predicted to decline by as much as 1/2 of their current numbers (to between 12 and 15 animals), and beaver would not naturally reestablish on Wales Creek.

Elk and deer numbers would increase by about 27 and 22 percent, respectively, as a result of timber harvest on the area not recommended for wilderness.

Opportunities for Primitive and Unconfined Recreation

Impacts on primitive and unconfined recreation would be essentially the same as described under the Proposed Action.

Conclusion: Impacts on solitude, naturalness and opportunities for primitive recreation would be the same as described under the Proposed Action. At one time or another all 11,580 acres would be impacted by the noises of motor vehicle and snowmobile uses of boundary and cherrystemmed roads and by logging and mining on the area recommended for nonwilderness. The worst case effect would be having all sources of noise working simultaneously and in spatial relationship to impact the entire 11,580 acres at one time. How-

ever, that situation is not very likely and the impact is predicted to be similar to the "more realistic" scenario described under the Proposed Action.

Impacts on naturalness would also be essentially the same as described under the Proposed Action. Natural values of the 100 acres of wet meadows proposed for habitat improvement treatment under the Proposed Action would not be impacted under this alternative.

Special features (elk wallows, warm springs, etc.) would be maintained as they would under the Proposed Action. Moose are expected to decline by about 1/2 of their current level due to deteriorating condition of wet meadows along Wales Creek. Beaver would not likely reestablish on Wales Creek. Logging on the 6,680-acre area not recommended for wilderness would contribute substantially to expected increases in elk and deer (approximately 27 and 22 percent, respectively).

Opportunities for primitive recreation would be affected much the same as would the opportunities for solitude and naturalness.

Effects on Timber Harvest

There would be no impact on timber harvest since the area proposed for wilderness in this alternative is not proposed for timber harvest in the RMP.

Conclusion: There would be no impact on timber harvest.

Effects on Exploration for and Development of Metallic Minerals (Primarily Gold and Silver)

The 4,900-acre Wales Creek drainage would be withdrawn from mineral entry. This would be an insignificant impact because there are no claims in Wales Creek. Furthermore, there has been no historic mining activity in the drainage, and the probability of finding profitable quantities of minerals is assumed to be only fair.

The remaining 6,680 acres would be open to mineral entry, but, only 2 of the 28 existing claims are expected to be developed. Impacts predicted for exploration and development are the same as described under the Proposed Action.

Conclusion: Withdrawal of the 4,900-acre proposed Wales Creek wilderness area would not greatly impact minerals exploration and development.

The remaining 6,680 acres would be available for mineral exploration and development, but only limited activity is expected.

Therefore, no impact to development of the WSA's mineral resources is predicted.

Effects on Oil and Gas Exploration and Leasing

The 4,900-acre Wales Creek drainage would be closed to leasing. No leasing would have an effect similar to the "no surface occupancy" stipulation of the Proposed Action in restricting oil and gas development on the WSA. Furthermore, the low expectation of finding marketable reserves of oil and gas, coupled with unfavorable economic returns from developing the resources is expected to discourage investment in oil and gas leasing and development.

Oil and gas exploration and development on the 6,680 acres of the WSA outside of MA 8 would be the same as that described under the Proposed Action. There would be no impact on development activities; however, no development is expected.

Conclusion: This alternative would have no significant impact on developing the oil and gas resources of the WSA.

Effects on Wildlife Habitats and Numbers

Big Game Species

The 4,900-acre Wales Creek drainage would not be developed but would continue to provide security habitat (particularly for big game species). Treatment of approximately 100 acres of wet meadows along Wales Creek to retard conifer encroachment and improve big game forage would not occur. As a result, invigoration of grasses and shrubs (particularly willows) would be left to natural processes (wildfire, insect and disease impacts on competing vegetation, etc.). Moose numbers would be expected to decline by as much as 1/2 (to between 12 and 15 animals) as long as the downward trend in habitat condition of wet meadows continued.

Resource management activities on the remaining 6,680 acres of the WSA would be the same as those described under the Proposed Action. Timber harvest would contribute to increased numbers of elk and deer by producing a mosaic of forage and cover. Preservation of security cover in the Wales Creek area would further favor those increases. The increase would be a little less than under the Proposed Action because of the loss of treatment to wet meadows on Wales Creek. Elk are predicted to increase by an estimated 27 percent to between 255 and 380 animals and deer by 22 percent, to between 120 and 245 animals. Resource management activities would cause temporary displacements of wildlife, but those activities would be small (site-specific), noncontinuous, and dispersed over a wide area. Displacements of animals would be

relatively minor in distance, largely to security areas in Wales Creek drainage.

Other Wildlife Species

Reestablishment of beaver on Wales Creek would not be likely as long as the decline in condition of wet meadows continued.

Sedimentation of streams caused by logging activities on the 6,680-acre non-wilderness area would be minor because of restrictions imposed by MA guidelines, best management practices and elk/logging guidelines. Increased sediment loading would be of a temporary nature, lasting only until vegetative cover stabilized the harvested cutting units. Therefore, the trout fisheries of Wales and Yourname Creeks would be maintained.

Conclusion: The proposed wilderness area would provide a large block of security habitat for big game species. Attributed primarily to the loss of treatment of wet meadows, moose are expected to decline by as much as 1/2 of their current number, and beaver would not be expected to reestablish on Wales Creek.

Logging would continue to enhance forage production on the 6,680-acre area not recommended for wilderness, contributing to projected increases in elk of between 255 and 380 animals and in deer of between 120 and 245 animals.

Disturbance to wildlife (particularly big game) from resource management activities on the area not recommended for wilderness would be a minor, short-term impact.

Trout fisheries of Wales Creek and Yourname Creek would not be adversely affected.

Effects on Recreation Uses (ORV, Snowmobile, Hunting and Primitive Recreation)

Wilderness opportunities and values would be provided on the 4,900-acre Wales Creek drainage. Management of the 6,680-acre area not recommended for wilderness would be the same as described under the Proposed Action.

Overall recreation use for the WSA would be estimated at approximately 690 visitor days/year, of which 260 visitor days would be the increase expected due to partial wilderness designation (including a developed trail system), enhanced snowmobile opportunities and improved hunting opportunities.

Opportunities to hunt and view moose would be decreased as moose numbers decline.

Motor Vehicle Use

There would be no change expected in current motor vehicle use described under the Proposed Action since that use occurs on cherrystemmed roads and roads adjacent to the boundary. The expected increase in hunting use (40 visitor days/year) would be a little less than that predicted for the Proposed Action because the projected increases in elk and deer would be less.

Snowmobile Use

There would be no change in snowmobile use from that described in the Proposed Action.

Hiking

Walk-in hunting use of the WSA would be assumed at 90 percent of the estimated 400 hunter days/year. A small increase in walk-in hunting (90 percent of the predicted increase in hunting use) is projected as a result of predicted increases in elk and deer numbers. An additional 70 visitor days/year are predicted in response to partial wilderness designation and development of a 16-mile trail system in the proposed wilderness area.

Primitive Camping

Primitive camping is assumed to be directly related to hunting and wilderness (10 percent of the hunting use and 60 percent of the wilderness use). As a result of projected hunting and wilderness uses, primitive camping is projected at approximately 90 visitor days/year.

Conclusion: Total recreation use would be projected at 690 visitor days/year.

Hunting use is projected to increase from 400 to 440 visitor days/year as a result of increases in elk and deer. Walk-in hunting use of the WSA would increase from the present 360 to about 395 visitor days/year due to increased hunting use. Snowmobile use would be precluded in the 4,900 acres proposed for wilderness but would be expected to continue at 20 snowmobile visitor days/year on the Wales Creek Fire Road. In the Yourname Creek drainage, snowmobile use is projected to increase from the current 10 snowmobile visitor days/year to 160. Increased recreation use directly related to wilderness designation is projected to be 70 visitor days/year. As stated under the All Wilderness Alternative, predicted

wilderness use is assumed to represent a dispersal of use from nearby, larger wilderness areas rather than new visitors to the state.

Effects on Local and National Economies

Impacts to the local timber industry with designation of the Wales Creek drainage as wilderness would be the same as that of the Proposed Action (No Wilderness/No Action) Alternative. The 400 mbf average annual cut contributed by the 6,680-acre multiple-use area would provide the same number of jobs and local income as under the Proposed Action. Annual income to the U.S. Treasury from timber sale receipts would also be the same.

Total recreation use of 690 visitor days would have a value of approximately $19,800 annually. The projected increase of 260 visitor days/year (valued at $7,800) would not affect local or regional economies, since the use is projected to result from dispersal of users from other local areas rather than from new visitors to the state and area.

Conclusion: Designation of the 4,900-acre Wales Creek drainage as wilderness would have the same effect on timber harvest as the Proposed Action (No Wilderness/No Action) Alternative would have. However, the withdrawal of timber harvest and associated incomes would be permanent through congressional action rather than administration allocation. The annual allowable cut from the 6,680 acres of the WSA proposed for non-wilderness would be the same as with the Proposed Action. Benefits to the local economy and the U.S. Treasury would also be the same. Increased recreation use would not affect either the local or regional economies.

Effects on Fire Suppression and Management

The impacts on fire management would be similar to those described under the Proposed Action.

HOODOO MOUNTAIN WSA

PROPOSED ACTION (NO WILDERNESS/ NO ACTION) ALTERNATIVE

Effects on Wilderness Values

The proposed action would not designate the 11,380-acre area as wilderness. It would be managed for other uses as prescribed in the Garnet RMP/EIS.

Solitude

The 1,700-acre Wet Cottonwood Creek Special Management Area (MA 9) would be managed to preserve its natural values and no motorized vehicle use (snowmobiles accepted) of the area would be allowed. Wheeled vehicle use (estimated at 200 visitor days/year) is currently restricted to roads adjacent to the north and east boundaries of the WSA and is administratively excluded (through planning decisions) from MA 9. The existing situation is projected to continue under this alternative. Solitude of the Special Management Area is impacted by peripheral vehicle traffic and snowmobiles along an estimated 3.5 miles of the Hoodoo Mountain Jeep Road (east boundary road). Assuming that the penetration of sound would average approximately 1 mile, motor vehicle and snowmobile uses of Hoodoo Mountain Jeep Road would impact the solitude of the entire 1,700 acres of MA 9. The low levels of uses (estimated at 200 visitor days/year for motor vehicles and 85 visitor days/ year for snowmobiles - 70 on Hoodoo Mountain Jeep Road and 15 on Gobbler Knob Vehicle Way) combined with topographic and vegetative screening would minimize some of the impacts of motor vehicles on solitude. Furthermore, traffic would be intermittent rather than continuous.

When logging begins outside of the Special Management Area (MA 9), the opportunities for solitude would be affected by the logging activities adjacent to the boundary. When that occurs, the sounds of logging would be predicted to impact the solitude of at least 450 acres of MA 9. This assumes that 3 cutting units would bound on MA 9 with 1,200 feet of each unit common with the Special Management Area boundary. The impacts of noise would be minimized by topographic and vegetative screening, and periods of activity would be intermittent with intervening periods of inactivity. Assuming that only 3 of the 10 cutting units would be logged concurrently, the impact of noise on MA 9 would be further reduced.

Solitude of the 9,680 acres outside of MA 9 would be affected by timber harvest, snowmobile use, motor vehicles along the boundary roads, and minor minerals exploration. Solitude would be impacted on approximately 2,100 acres along Hoodoo Mountain Jeep Road by the sounds of infrequent motor vehicle traffic. Opportunities for solitude would be eliminated on 300 acres of cutting units by the sights and sounds of logging. The noise associated with timber harvest would impact the solitude of approximately 2,000 acres around each cutting unit. Assuming that no more than 3 cutting units would be logged concurrently, solitude would be impacted on an estimated 6,000 acres. Metallic mineral exploration would eliminate solitude on an estimated 3 acres over a 15- to 20-year period. In addition, the sounds of exploration activities would impact the solitude of approximately 2,000 acres adjacent to the exploration site.

Snowmobile use would be authorized on logging roads and cleared areas within the WSA as well as on the perimeter roads. Snowmobiling would continue to affect solitude on at least 2,500 acres at any given time once logging has been completed. However, the overall impact from snowmobiles would be minimal as the WSA receives virtually no other kinds of winter recreation use.

Worst case effect would be all sources of sound disturbance functioning simultaneously and spatially positioned to impact the solitude of all 9,680 acres at the same time. However, the impacts on solitude from motor vehicle use, snowmobile use, timber harvest and mineral exploration would occur intermittently rather than continuously. When these activities were halted, solitude would be reestablished.

The impacts on solitude from logging represent effects of initial entry timber harvest. Reforestation may not provide an adequate screen to limit impacts from additional entries to the same acreage as the first entry. Consequently, with successive entries solitude may be affected on larger areas of perception due to the change in vegetative screening.

The visual impacts on solitude would be the same as those described below for naturalness.

Naturalness

Naturalness of the 1,700-acre Wet Cottonwood Special Management Area (MA 9) would be generally preserved. An assumption was made that visual penetration into the WSA was at least 100 yards because of the screening effectiveness of varying densities of tree and shrub cover. Consequently, visual intrusion of the Hoodoo Mountain Jeep Road was estimated to impact the perception of naturalness on 120 acres of MA 9.

The natural character of approximately 40 acres of wet meadows along Wet Cottonwood Creek would be lost due to removal of encroaching timber followed by controlled burning.

Timber harvest adjacent to the boundary of MA 9 would be predicted to impact the perception of naturalness on an estimated 450 acres within the Special Management Area. This assumes that 3 of the 10 cutting units would bound on MA 9 with 1,200 feet of each unit common with the boundary. With that assumption, approximately 25 acres adjacent to the cutting units would be impacted. The estimate also projects 400 acres of vistas within MA 9 being impacted by the visual effects of logging.

Naturalness of the remaining 9,680 acres would be impacted by developments, timber harvest, vegetative treatment of wet meadows, and mineral exploration. Visual intrusion of Hoodoo Mountain Jeep Road would impact at least 100 acres along the eastern boundary of the multiple use area.

The natural character of up to 60 acres of wet meadows along Wet Cottonwood Creek would be impacted by removal of timber and burning of the site.

Logging would eliminate the natural character of approximately 300 acres and affect the perception of naturalness from an additional 700 acres (an estimated 100 acres peripheral to the cutting units and 600 acres of vistas). Impacts from logging on the natural values of the 9,680 acres outside of MA 9 represent first entry effects. Complete regeneration in this area takes 25 to 30 years. Consequently, the effects of logging could eventually be visible on all or most of the 9,680 acres because of the various stages of regeneration from previous harvest entries.

Mineral exploration would eliminate naturalness on an estimated 3 acres over the next 15 to 20 years and impact the perception of naturalness on an additional 6 acres.

The impact of sounds on naturalness would be much the same as described under solitude. Sound would have intermittent effects on naturalness, whereas the visual impacts would be continuous and of a longer term.

Supplemental Values

The WSA contains special features along Wet Cottonwood Creek such as Cottonwood Meadow and other wet meadows, elk wallows, etc., which are important habitat components for moose, elk, and deer. They will be preserved on 1,700 acres of the upper reaches of Wet

Cottonwood Creek drainage. Timber is encroaching on these meadows. Removal of this timber on approximately 100 acres of wet meadows will invigorate shrub and grass growth and influence projected increases in big game numbers by as much as 10 percent.

Opportunities for Primitive and Unconfined Recreation

Opportunities for primitive and unconfined recreation would be affected by both visual and noise intrusions. The impacts would be essentially the same as described for naturalness and solitude.

Conclusion: Solitude of the WSA would be affected by motor vehicle use, snowmobile use, timber harvest and exploration for metallic minerals. Sound would have the most extensive impact on opportunities for solitude. The entire WSA could be impacted by the sounds of motorized vehicles and resource management activities. At worst case, assuming all activities occurring simultaneously, at maximum levels and spatially positioned to have the broadest impact, all 11,380 acres could be affected at one time. However, the levels and durations of most activities are expected to be low. Furthermore the effects would be intermittent, occurring only at times of activity, and would be of a shorter term than visual impacts. Therefore, opportunities for solitude should be attainable on most occasions on the majority of the WSA. Visual impacts on solitude would be similar to those discussed below under naturalness.

Naturalness would be affected by both visual and noise intrusions. Treatment of wet meadows would impact natural values on 100 acres along Wet Cottonwood Creek. The perception of naturalness would be impacted on an estimated 220 acres along the east boundary of the WSA by the presence of the Hoodoo Mountain Jeep Road. Timber harvest could impact natural values and the perception of naturalness on an estimated 425 acres of Wet Cottonwood Creek Special Management Area (MA 9) and on 1,000 acres of the multiple use area (300 acres of clearcuts, 100 acres peripheral to the cutting units and 600 acres of vistas within the viewshed of logged areas). Mineral exploration would affect the natural values of an estimated 3 acres over a 15- to 20-year period and would impact the perception of naturalness on an additional 6 acres. Visual intrusions could impact naturalness and the perceptions of naturalness on an estimated maximum of 1,755 acres of the WSA.

Impacts to naturalness by the sounds of resource management activities would be the same as described for solitude.

Special features will be preserved on 1,700 acres by administrative allocation of land use. Proposed habitat improvements of the 100 acres of wet meadows, a special feature of the study area, would preserve the areas for moose, elk, and deer, and could influence predicted increases in their numbers by as much as 10 percent.

Opportunities for primitive and unconfined recreation would be affected by the sights and sounds of resource management activities. Impacts would be the same as described for solitude and naturalness.

Effects on Timber Harvest

With unrestricted timber harvest, the WSA has the potential for approximately 635 mbf annual cut. Under special management designation (MA 9), 1,700 acres in upper Wet Cottonwood Creek (Wet Cottonwood Creek Special Management Area) would be unavailable for timber harvest. This area represents approximately 1,000 acres of Commercial Forest Lands (CFL) and a potential cut averaging about 100 mbf, annually.

This alternative would not cause an impact on timber harvest and would follow mitigation measures established in the land use plan for the area (Garnet RMP/EIS). The approximately 8,000 acres of CFL on the remaining 9,680 acres of the WSA would be available for timber management. However, these acres would be managed with an emphasis on wildlife habitat management (see management guidelines and objectives for MAs 4, 5 and 6 in Appendix B). In managing this area primarily for big game (elk in particular), restrictions on timber harvest would reduce the average annual cut by about 20 percent from a potential of approximately 535 mbf. Thus, the CFL would contribute, on the average, approximately 430 mbf toward the annual allowable cut.

Conclusion: There would be no impact on timber harvest with this alternative.

Effects on Exploration for and Development of Metallic Minerals (Primarily Gold and Silver)

The entire 11,380 acres of the WSA would be available for mineral exploration and development subject to 43 CFR 3809 mining regulations.

There are no existing claims on the WSA, although two unpatented claims in Braziel Creek drainage have been abandoned. No further exploration or development is expected in the foreseeable future because of the following factors:

* a low to moderate potential for occurrence of metallic minerals;
* abandonment of two unpatented claims;
* a possible low potential for discovering developable deposits (suggested by the abandoned claims).

If exploration does occur, no more then one project is expected over the next 15 to 20 years with a resulting surface disturbance of an estimated 3 acres.

Conclusion: There would be no impact. The entire area would be available for mineral exploration and development but none is anticipated.

Any exploration would directly impact an estimated 3 acres over the next 15 to 20 years.

Effects on Oil and Gas Exploration and Leasing

All of the WSA would be available for oil and gas leasing. Exploration and development would be subject to stipulations as follows: no surface occupancy on about 7,000 acres and seasonal stipulations on 9,680 acres (acres of seasonal stipulations overlap many acres of no surface occupancy). About 4,380 acres would be available for surface occupancy but no exploration or development is projected in the foreseeable future. Potential for occurrence (low to moderate), low economic return, limited surface occupancy and other factors lead to this prediction.

Conclusion: There would be no impact. The entire WSA would be available for oil and gas leasing, with surface occupancy allowed on less than 40 percent (4,380 acres) of the WSA. Low to moderate potential for occurrence, low economic return, limited surface occupancy and other factors support a prediction of no exploration or development in the foreseeable future.

Effects on Wildlife Habitats and Numbers

Big Game Species

The 1,700-acre special management area (MA 9) would remain largely undisturbed and important security areas would be preserved because of thick vegetative cover. Cottonwood Meadow and other wet meadows along Wet Cottonwood Creek would be treated to retard conifer encroachment and enhance key elk forage areas. Total acreage to be treated would probably not exceed 100 acres (located in MAs 5 and 9).

Management emphasis for the remaining 9,680 acres would be to provide big game forage, cover and travel components interspersed within and adjacent to security habitat. Timber harvest would provide 30-acre openings at each harvest entry for forage production. Motor vehicle and snowmobile uses would be regulated by season and location to insure that animals are not disturbed during critical periods.

With an improved pattern of cover to openings (estimated at 0.1 acre: 1 acre - including harvested cutting units, wet meadows and dry mountain meadows), big game responses would be projected as follows:

* moose numbers are expected to inacrese, perhaps as much as double (to between 10 and 20 animals), attributed partially to habitat improvement and partially to natural range expansion;
* elk would increase by approximately 30 percent to between 325 and 455 animals;
* deer would increase by approximately 40 percent to between 140 and 210 animals.

Temporary displacements of big game animals in localized areas could be expected because of logging activities, primarily. The impact would be minor because disturbances would be periodic and limited in extent. Animals would not be expected to move long distances, and would probably remain in the WSA. Expected displacements would be from sites of activity to security areas within MA 9.

Other Wildlife Species

Since limited resource management activity is expected in Wet Cottonwood Creek Special Management Area (MA 9), sediment loads would be little more than natural yields.

Outside of MA 9, sediment yields to Braziel and Wet Cottonwood Creeks would be light since management practices pertaining to timber harvest which include small irregular cutting units of 20 to 40 acres, cutting units spaced 600 feet apart, and buffer zones around wallows, streams, foraging areas, and resting areas would minimize erosion. Trout populations in Wet Cottonwood Creek would not be adversely affected by timber harvesting activities.

Conclusion: Treatment of wet meadows along Wet Cottonwood Creek and logging activities could contribute to increases in big game animals:

* *moose numbers are expected to increase, perhaps as much as double (attributed partially to habitat improvement and partially to natural range expansion);*
* *elk are expected to increase by an estimated 30 percent;*
* *deer are expected to increase by an estimated 40 percent.*

Effects on Recreation Uses (ORV, Snowmobile, Hunting and Primitive Recreation)

Motor Vehicle Use

There is no wheeled motor vehicle use authorized within the WSA. Access is from perimeter roads (Hoodoo Mountain Jeep Road and a logging spur road at the north end of the WSA). Current use of Hoodoo Mountain Jeep Road that is presumed to be associated with the WSA is estimated at 200 visitor days/year. Ninety percent or 180 visitor days/year is assumed to be hunting use of the WSA. Management Area 9 would remain closed to wheeled motor vehicles.

Access into the other 9,680 acres of the WSA would be needed for timber harvest. New logging roads would be used for 2 to 3 years during logging operations and then closed unless administratively determined otherwise. Increases in elk and deer attributed largely to new forage areas produced by logging is expected to attract an additional 30 visitor days/year of hunting use.

Snowmobile Use

Although snowmobiles are allowed by grandfathered right, current use on the WSA is minor. An estimated 15 visitor days/year of snowmobile use occurs within the WSA on Gobbler Knob Vehicle Way. Unlike Wales Creek, the Hoodoo Mountain area does not have a designated trail. Snowmobile use of roads in the vicinity of the WSA (Hoodoo Mountain Jeep Road, Indian Creek Road, etc.) is estimated at approximately 100 visitor days/year, but they are not considered part of the recreation use of the WSA.

Future construction of timber sale roads and clearcuts established by logging could increase snowmobile use of the WSA by 100 snowmobile visitor days/year.

Hiking

Ninety percent of the hunting use is assumed to be walk-in because the WSA is part of a larger walk-in hunting area. Walk-in hunting use is projected at 190 visitor days/year (165 visitor days current use and approximately 25 visitor days increase). Signs of current use on existing trail segments in the southern part of the WSA suggest that a developed foot trail would further increase walk-in use. Current trail use is estimated at approximately 55 percent (90 visitor days/year) of the walk-in hunting use. Predicted increase would be about 20 percent of that amount or nearly 20 additional visitor days/year, most of which would be hunting. Total estimated walk-in use would be 210 visitor days/year based on current and projected hunting visits and on development of a foot trail system.

Primitive Camping

Projected level of activity would be estimated at 20 percent of the hunting use, current and projected increase (approximately 40 visitor days/year).

Conclusion: Out of the 200 visitor days/year of motor vehicle use that occurs adjacent to the WSA, 180 visitor days are assumed to be hunting use associated with the WSA. An additional 30 visitor days/year of hunting is projected as a response to increases in elk and deer numbers. An increase in the current snowmobile use of 15 snowmobile visitor days/year to 115 visitor days/year would be the expected response to new timber sale roads and logged areas. Walk-in hunting use is presently 165 hunter days/year. An increase of 45 visitor days/year in hiking use (primarily walk-in hunting) would be estimated in response to development of a hiking trail in the WSA and in response to increases in big game populations.

Total recreation use of the WSA is projected at 365 visitor days/year (current uses and projected increases).

Effects on Local and National Economies

The 430 mbf average annual cut from the WSA would provide four jobs in the private sector with salaries of about $100,000. About $21,500 would be provided to the federal treasury annually from timber sale receipts.

The value of increased recreation use is about $4,500 annually.

Conclusion: The annual allowable cut from the 9,680-acre portion of the WSA would provide about 4 jobs and $100,000 in salaries. Income to the federal treasury would be about $21,500 annually from timber sale receipts and oil and gas leases. Increased recreation use would have a value of about $4,500 annually. Since the increase in recreation use is assumed to result from dispersal of users from other local areas no impact on local and regional economies is expected.

Effects on Fire Suppression and Management

Upper Wet Cottonwood Creek drainage (1,700 acres) and 315 acres of riparian lands outside of that drainage area would be classified as limited suppression areas (no ground disturbing equipment) because of management designations. The potential for catastrophic fire (over 1,000 acres) would be higher than if timber in the area was periodically cut and full fire suppression was allowed. Without timber harvest, fuel load would increase. Hand construction of fire lines, limited access, and rugged topography would slow the response to and the containment/control of wildfires. These factors could increase the costs of fire suppression and would contribute to potentially greater (although temporary) losses of resources. Escape of a major fire from this area could be difficult to contain and control, but full fire suppression would be utilized to protect human life or private property.

Full fire suppression would be allowed on the remaining 9,365 acres of the WSA with no impact on fire suppression activities.

Prescribed fire (broadcast burning) would be used on slopes greater than 40 percent (approximately 140 acres at initial harvest entry and 1,900 acres total) to reduce slash and prepare the site for seedling reestablishment.

Conclusion: Limited wildfire suppression (no ground disturbing equipment) and no timber harvest on approximately 2,000 acres would produce a situation more conducive to catastrophic fires.

There would be no impact to wildfire suppression on approximately 9,380 acres of the WSA.

Prescribed fire would be used on about 1/3 of the cutting units to dispose of slash and prepare the sites for seedling reestablishment.

ALL WILDERNESS ALTERNATIVE

Effects on Wilderness Values

Legislative designation would protect wilderness values of solitude, naturalness, supplemental values and opportunities for primitive and unconfined recreation on the 11,380-acre WSA. Timber harvest, mining and energy development would not be allowed within the WSA. Users, however, would be subjected to the sights and sounds of these activities (timber harvest, motorized vehicle use, etc.) from outside the WSA, which would detract from the wilderness values. Topographic and vegetative screening could minimize these impacts in some of the areas.

Solitude

Solitude opportunities would generally be preserved within the entire 11,380 acre WSA as logging operations, and snowmobile use would not be allowed. Impacts would be from activities outside of and peripheral to the proposed wilderness area. Sounds of motor vehicles and snowmobiles on Hoodoo Mountain Jeep Road would impact an estimated 3,200 acres along the east side of the proposed wilderness area. These sounds would be intermittent and infrequent because of the relatively low levels of motor vehicle and snowmobile uses. Sounds of adjacent activities would penetrate an estimated 1 mile into the proposed wilderness area. The total area affected would depend upon the numbers and locations of activities. At worst case the area affected by sound could be substantial but less than the Proposed Action because of the absence of timber harvest under this alternative.

Visual impacts on solitude would be similar to those described below for naturalness. They would be continuous rather than intermittent and of a longer term than noise impacts.

Naturalness

Natural values would be preserved in the entire 11,380 acre WSA. Natural viewsheds within the proposed wilderness area would be impacted by activities (timber harvest, motor vehicles, snowmobiling, etc.) adjacent to the boundary. Vegetative and topographic screening would limit the intrusion of adjacent activities into the naturalness of the proposed wilderness area. Visual impacts from peripheral activities would be assumed to penetrate approximately 100 yards into the proposed wilderness. Visual intrusion of the Hoodoo Mountain Jeep Road would impact the perception of naturalness on an estimated 180 acres along the eastern boundary of the proposed wilderness area. The perception of naturalness would be impacted on portions of an estimated 600 acres of vistas within the viewsheds of developments and activities outside of the proposed wilderneses area.

Supplemental Values

The special features (wet meadows, elk wallows, etc.) would be preserved under this alternative, although no vegetation would be removed to modify and improve habitat for big game animals. Elk and deer populations would not be expected to increase because wet meadows would not be treated and the absence of logging would preclude additional openings.

Opportunities for Primitive and Unconfined Recreation

Primitiveness and confinement of recreation opportunities on the proposed wilderness area would be affected by the sights and sounds of adjacent activities to the extent described under solitude and naturalness.

Conclusion: Solitude, naturalness and primitive recreation opportunities would generally be protected on the 11,380-acre proposed wilderness area. Activities adjacent to the area would both audibly and visually impact wilderness values. The level and extent of impacts cannot be determined without knowing the locations and types of those activities. Sounds of motor vehicles and snowmobiles could impact as much as 3,200 acres along the eastern boundary of the proposed wilderness area. However, audible effects would be intermittent and infrequent because of the low volume of traffic on the Hoodoo Mountain Jeep Road. Visual intrusion of developments and activities outside of the proposed wilderness area would impact an estimated 180 acres along the eastern boundary and parts of 600 acres of vistas.

Proposed treatments of wet meadows to enhance big game habitat would not occur. New forage openings produced through timber harvest would be foregone. Big game populations would be predicted to remain generally unchanged, relying on natural processes for habitat quality and diversity.

Effects on Timber Harvest

Timber harvest from 8,000 acres of CFL would be precluded. The actual loss would be a 430 mbf average annual cut.

Conclusion: Designation of the WSA as wilderness would result in the loss of 8,000 acres of CFL to timber production and an annual sustainable harvest averaging 430 mbf.

Effects on Exploration for and Development of Metallic Minerals (Primarily Gold and Silver)

The entire 11,380 acres would be withdrawn from mineral entry. Withdrawal would preclude exploration and development of potential mineral resources. However, the probability of finding resources in developable quantities is unknown but suspected to be low. Therefore, the impact to developing the mineral resources of the WSA is projected to be minor.

Conclusion: The withdrawal of 11,380 acres from mineral entry is predicted to have no significant impact on development of the Resource Area's mineral resources.

Effects on Oil and Gas Exploration and Leasing

Designation of the WSA as wilderness would mean that 11,380 acres with a moderate potential for oil and gas occurrence would be closed to further leasing. By comparison, neither leasing nor exploration would be expected in the foreseeable future under a no wilderness designation due to a predicted low probability of discovering marketable oil and gas reserves and a poor economic return. Consequently, no significant impact is expected.

Conclusion: Closing the WSA to leasing would preclude exploration and development of potential oil and gas resources. However, the impact from this action is projected to be low.

Effects on Wildlife Habitats and Numbers

Big Game Species

Wilderness designation would preclude management of wildlife habitats by timber harvest and prescribed burning. Treatment of 100 acres of wet meadows along Wet Cottonwood Creek to improve forage production would be foregone with this alternative. Furthermore, establishment of 300 acres of forest openings through logging would not occur. The result would be a pattern of cover and openings (forage areas) influenced solely by natural processes.

There would be no disturbance to big game caused by resource management activities, although increased visitor use under this alternative could cause some level of disturbance. Though animals would likely disperse from human activity sites (i.e. camping sites), they would probably remain in the WSA since food, cover and water are expected to remain available.

Animal responses to wilderness designation would be predicted as follows:

* moose, elk and deer would remain at or near current levels; although moose might increase slightly due to natural range extension.

Other Wildlife Species

Fisheries of Wet Cottonwood Creek would remain the same or improve since their habitats would be affected by natural processes rather by resource management activities.

Conclusion: Predicted responses of big game animals to wilderness management would be as follows:

* *moose, elk and deer numbers are not expected to change; although moose might increase slightly due to natural range extension.*

Increased visitor use could cause some disturbance but would not be expected to displace animals from the WSA..

Fisheries would not be adversely affected by wilderness designation.

Effects on Recreation Uses (ORV, Snowmobile, Hunting and Primitive Recreation)

Designation of the WSA as wilderness would increase use of the WSA by an estimated 100 visitor days/year. As stated under the Wilderness Alternative for Wales Creek WSA this increase does not represent new visitors to the state, but rather a dispersal of use from nearby heavily-used wilderness areas.

Motor Vehicle Use

The WSA would be closed to motorized vehicle use. Use of Hoodoo Mountain Jeep Road (200 visitor days/year) would continue since the road adjoins the eastern boundary of the

WSA. Hunting use of the WSA (180 visitor days/year) would not be expected to increase because big game numbers would remain essentially the same as currently estimated.

Snowmobile Use

Use associated with the Hoodoo Mountain Jeep Road and the Indian Creek Road would not change. Use of Gobbler Knob Vehicle Way and predicted increase associated with timber harvest on the WSA (115 visitor days/year) would not occur under this alternative.

Hiking

Walk-in hunting use is expected to remain at 165 visitor days/year. An additional 100 visitor days/year is predicted with wilderness designation and development of a foot trail system.

Primitive Camping

Camping associated with hunting use is assumed to be approximately 20 percent of that use, and camping associated with wilderness use is estimated at 60 percent of that use. Total projected camping use is estimated at 95 visitor days/year.

Conclusion: Total recreation use of the WSA under this alternative would increase from the present level of 200 to 300 visitor days/year. Motor vehicle and snowmobile uses of the perimeter roads (see Chapter 3, Hoodoo Mountain WSA, Recreation Resources) would not be expected to change significantly. Current and proposed snowmobile use of the WSA (115 visitor days/year) would be lost. Walk-in hunting use and hiking trail use would remain at 165 visitor days/year. An additional 100 visitor days/year would be associated with wilderness designation and a developed trail system. Camping days are projected to increase from 35 to 95 with the additional wilderness recreation use.

Effects on Local and National Economies

The actual loss in timber-related benefits would be 430 mbf and 4 jobs with $100,000 of commensurate salaries. These numbers also represent a loss of approximately $21,500 in annual timber sale receipts to the U.S. Treasury. The increase in recreation use is valued at an estimated $3,000 annually. Based on an assumption that the use is a dispersal of users from other local areas rather than new visits, no impact on local and regional economies is predicted.

Conclusion: Losses would be 430 mbf of annual timber harvest. This figure equates to a loss of an estimated 4 jobs and $100,000 in salaries to the local economy and $21,500 to the U.S. Treasury. The value of increased recreation use is estimated at about $3,000 annually.

No impact to local and regional economies is expected.

Effects on Fire Suppression and Management

Wilderness designation with the resulting restrictions on wildfire suppression methods (hand construction of fire line, no use of motorized ground vehicles, etc.) and unrestricted fuel loading would increase the potential for a catastrophic fire (over 1,000 acres). The area has a history of such occurrences every 150 years, although modern firefighting techniques could lower the potential to an estimated 50/50 probability (ie., the likelihood of a major fire occurring is as high as the likelihood of one not occurring). Even under restricted fire suppression methods, full suppression actions would be utilized if fire threatened life or private lands and structures.

Prescribed fire (used in conjunction with timber management and wildlife habitat enhancement) would not be used because of equipment restrictions applied to wilderness areas. Consequently, fuel buildup would not be retarded with prescribed burning.

Conclusion: With restrictions on firefighting methods and unrestricted fuel load buildup under wilderness designation, the potential for a catastrophic fire occurring would increase.

PARTIAL WILDERNESS ALTERNATIVE

Effects on Wilderness Values

This alternative recommends wilderness designation of approximately 5,870 acres of the WSA and uses other than wilderness for the remaining 5,510 acres.

Wilderness designation of the Wet Cottonwood Creek drainage (approximately 5,870 acres) would provide legislative protection to the solitude, naturalness, supplemental values and opportunities for primitive and unconfined recreation of that area.

The remaining 5,510 acres of the WSA would be available for multi-resource activities. This area has been allocated for big game habitat management as the primary objective, and other resource activities would be governed by guidelines to enhance or protect those habitats.

Solitude

The solitude of approximately 2,500 acres of the 5,870-acre proposed wilderness area would be intermittently impacted by the sounds of motor vehicles and snowmobiles using Hoodoo Mountain Jeep Road. Solitude on the proposed wilderness area would be affected by logging activities on the 5,510 acres not recommended for wilderness. When timber harvest occurs adjacent to the proposed wilderness area, the solitude of an estimated 900 acres would be impacted by the sounds associated with logging (assumes 6 cutting units bounding the proposed wilderness area with 1,200 feet of each unit common with the wilderness boundary). The impacts of noise would be reduced by vegetative and topographic screening, and periods of activity would be intermittent with intervening periods of inactivity. Assuming that only 3 of the 10 cutting units would be logged concurrently, the impact of noise on the proposed wilderness area would be further reduced.

On the 5,510 acres not recommended for wilderness, solitude would be impacted by the sounds of motor vehicles, snowmobiles, logging and mineral exploration. The solitude of the entire area could be diminished if all of those activities were operating at the same time. Motorized vehicle traffic on Hoodoo Mountain Jeep Road would impact the solitude of an estimated 1,000 acres.

Opportunities for solitude would be eliminated on 300 acres of cutting units. Furthermore, the sounds of logging would impact approximately 2,000 acres peripheral to each cutting unit. Assuming that no more than 3 cutting units would be logged concurrently, an estimated 6,000 acres would be impacted. After logging is completed, snowmobile use could extend the impact on solitude of an estimated 2,500 acres on and adjacent to the logged areas. Snowmobile impacts to solitude would be mitigated by seasonal differences in activities since the area has little to no other winter recreational use.

Mineral exploration would eliminated solitude on an estimated 3 acres over a 15- to 20-year period. In addition, the sounds associated with exploration activities would impact on an additional 2,000 acres adjacent to the site.

Worst case effect would have all sources of noise active simultaneously and in spatial relationship to impact the solitude of the entire 11,380 acres of the WSA. However, noise sources would typically occur intermittently and relatively infrequent.

The effects of future timber harvest entries on the perception of solitude are the same as described in the Proposed Action.

Naturalness

The natural values of 100 acres of wet meadows along Wet Cottonwood Creek would not be affected. Under wilderness designation, the proposed treatment of those meadows (see Chapter 2, Proposed Action) would not occur.

Hoodoo Mountain Jeep Road would impact the perception of naturalness on an estimated 145 acres along the eastern boundary of the 5,870-acre area proposed for wilderness.

Timber harvest adjacent to the wilderness boundary would impact the perception of naturalness on an estimated 600 acres. Assuming 6 of the 10 cutting units bounding on the proposed wilderness area and 1,200 feet of each unit common with the wilderness boundary, an estimated 50 acres would be affected. In addition, an estimated 550 acres of vistas within the proposed wilderness area would be impacted by the visual affects of logging.

Naturalness of the 5,510 acres proposed for multiple resource management would be impacted by developments, timber harvest and mineral exploration. Visual intrusion of Hoodoo Mountain Jeep Road would impact at least 100 acres along the eastern boundary of the multiple use area. Logging would eliminate the natural character of approximately 300 acres and affect the perception of naturalness on an additional 550 acres (estimate 100 acres adjacent to the cutting units and 450 acres of vistas). The effects of logging could eventually be visible on all or most of the 5,510 acres because of the time required for complete regeneration of cutting units. The effects of mineral exploration would be as described under the Proposed Action.

Supplemental Values

On the 5,870-acre area proposed for wilderness, wet meadows and associated elk wallows would be maintained by natural processes rather than by any specific management action. Conifer encroachment into wet meadows would progress until set back by fire, disease, insects or other natural means.

On the 5,510-acre portion not recommended for wilderness, timber harvest would be the only management applied treatment to big game habitats of the WSA. Logging would be managed to provide forage openings for big game. Moose, elk and deer would respond positively to opening the forest canopy since security habitat would be maintained on the area recommended for wilderness.

Opportunities for Primitive and Unconfined Recreation

Primitive recreation opportunities would generally be preserved within the 5,870 acres proposed for wilderness. They would be affected by the sounds and sights of adjacent developments and resource management activities similar to the effects on solitude and naturalness described above.

Primitive recreation would be affected on the 5,510-acre area not recommended for wilderness similar to the impacts on solitude and naturalness described above and under the Proposed Action. Much of the impact on primitive recreation from snowmobiling would be mitigated by the season of use as there is little or no other winter recreation projected.

Conclusion: The sounds of motor vehicles and snowmobiles on Hoodoo Mountain Jeep Road and the sounds of resource management activities on the area recommended for nonwilderness could impact the solitude of all 11,380 acres of the WSA at one time. This will not be likely, however, since the projected level of activities is low and their expected durations are relatively short. Furthermore, activities would be intermittent resulting in periods of noise with intervening quiet periods. Consequently, opportunities for solitude should be attainable on most occasions on the majority of the WSA (particularly on the proposed wilderness area).

Naturalness of the WSA is currently affected by adjacent developments and activities. Projected activities and developments (motor vehicle use, timber harvest, road construction, etc.) are expected to impact the perception of naturalness on 745 acres of the area recommended for wilderness. Natural value and perception of naturalness on an estimated 960 acres of the proposed nonwilderness area would be impacted by projected activities and developments.

Elk and deer populations would respond favorably to the combination of forage openings produced by timber harvest on the area proposed for nonwilderness and security habitat maintained on the area proposed for wilderness.

Primitive recreation opportunities would generally be preserved on the area proposed for wilderness. However, the sights and sounds of vehicle traffic and resource management activities would affect primitive and unconfined recreation much the same as described for solitude and naturalness.

Effects on Timber Harvest

A portion of the 5,870 acres recommended for wilderness is not projected for timber harvest by reason of land use allocation in the Garnet RMP/EIS. Wilderness designation would however, cause timber harvest to be foregone on an additional 3,500 acres of CFL with a potential harvest averaging 220 mbf per year.

There would be no impact on timber harvest within the 5,510 acres not recommended for wilderness. Approximately 4,500 acres of CFL would be available for timber harvest with an emphasis on wildlife habitat management and protection (see management objectives and guidelines for MAs 4, 5 and 6 in Appendix B). The potential harvest on the available CFL would average 315 mbf/year, but management restrictions would reduce that to an annual harvest averaging 250 mbf.

Conclusion: Wilderness designation would preclude timber harvest on approximately 3,500 acres of CFL and cause a reduction in average annual harvest from 430 mbf to 250 mbf.

Effects on Exploration for and Development of Metallic Minerals (Primarily Gold and Silver)

The 5,870-acre proposed wilderness area would be withdrawn from mineral entry. Exploration and development of potential mineral resources would be lost due to withdrawal. However, the impact of that loss would be negligible because no mineral exploration or development is expected in the Wet Cottonwood Creek drainage.

The remaining 5,510 acres would be open to mineral entry, but there would be little to no impact from minerals activities. Exploration and development are unlikely because of a low to moderate potential for occurrence of metallic minerals and, a questionable but suspected low probability of finding profitable deposits. In the event that exploration did occur it would be as described under the Proposed Action.

Conclusion: There would be no predicted impact on mineral exploration and development; nor are there any anticipated impacts from minerals activities.

Effects on Oil and Gas Exploration and Leasing

The 5,870-acre area proposed for wilderness would be withdrawn from future oil and gas leasing. The impact of such action on the development of the WSA's oil and gas resources is negligible. The WSA has a low to moderate potential for the occurrence of oil and gas resources and a suspected low probability of discovering marketable quantities and qualities. Other factors that would likely limit interest in the WSA include cost of developing a wildcat well, cost of transporting oil and gas resources, a low economic return on oil and gas produced, and the general ruggedness and remoteness of the

area. Consequently, the entire WSA would probably not be attractive to the oil and gas industry in the foreseeable future.

Exploration and development on the remaining 5,510 acres would be subject to no-surface-occupancy or seasonal stipulations based on present and projected management direction. No surface occupancy would affect 2,900 acres because of slopes over 30 percent and riparian areas. About 2,600 acres would remain available for surface occupancy, but these would be subject to seasonal stipulations because of the emphasis on big game habitat management for the WSA. These restrictions would not significantly impact oil and gas exploration, leasing and development on the WSA because a suspected low probability for discovering marketable concentrations of oil and gas and other factors mentioned above limit the likelihood of future exploration and development.

Conclusion: There would be no foreseeable impact on oil and gas exploration and development. Opportunities for exploration and development of oil and gas resources on the 5,870-acre proposed wilderness area would be foregone. However, no exploration or development is projected because of the predicted low probability of profitable deposits of oil and gas.

Effects on Wildlife Habitats and Numbers

Big Game Species

Wilderness designation would provide a naturally regulated pattern of security habitat, forage, and travel components on approximately 5,870 acres in Wet Cottonwood Creek drainage. Increased visitor use would cause some disturbance, but the amount of security habitat available would minimize that impact.

Timber harvest and prescribed fire, as needed, on the remaining 5,510 acres would provide and maintain forage openings, cover, travel components and security habitat. Logging activities and snowmobile use would cause displacements of wildlife (particularly big game). Because those activities would be relatively small (in terms of area affected), noncontinuous, and dispersed over a wide area, displacements of wildlife would be intermittent and temporary. Road closures except to snowmobile use would reduce disturbance to wildlife particularly during periods when big game would most likely be using the public lands. Furthermore, displacements would likely be to security areas within the WSA and not to locations outside of it. Animals would be expected to move from areas of activity to more secure areas such as the proposed wilderness portion of the WSA.

With the provision of security habitat on the area recommended for wilderness and additional forage areas (through timber harvest) on the remaining 5,510 acres, elk, deer and moose are predicted to increase. Moose numbers are expected to increase, perhaps as much as double. Elk are predicted to increase by approximately 25 percent to between 320 and 435 animals. Deer numbers are projected to increase by an estimated 35 percent to between 135 and 205 animals.

Other Wildlife Species

Being within the proposed wilderness area, Wet Cottonwood Creek would not be impacted by timber and other resource management activities. As a result, fisheries of Wet Cottonwood Creek would not be adversely affected by the management actions of this alternative.

Conclusion: Habitat maintenance on the 5,870-acre proposed wilderness area and habitat enhancement on the remaining 5,510 acres of the WSA would result in elk, deer and moose populations increasing as follows:

- *moose numbers could nearly double to between 10 and 20 animals (attributed partially to habitat improvement and partially to natural range expansion);*
- *elk would increase to between 320 and 435 animals;*
- *deer would increase to between 135 and 205 animals.*

Fish habitats and populations of Wet Cottonwood Creek would not be impacted.

Effects on Recreation Uses (ORV, Snowmobile, Hunting and Primitive Recreation)

Motor Vehicle Use

The 5,870-acre proposed wilderness area would be closed to motor vehicles, which would not change the existing situation. Vehicle use of Hoodoo Mountain Jeep Road would be comparable to that described under the Proposed Action (200 visitor days/year). Hunting use, assumed to be ninety percent of the motor vehicle use (or 180 visitor days) is expected to continue. An increase in hunting use of 20 visitor days/year is expected as a response to increases in elk and deer numbers.

Snowmobile Use

Snowmobile use of Gobbler Knob Vehicle Way (15 snowmobile visitor use days/year) would not occur under this alternative, since the vehicle way would be in the area recommended for wilderness.

The increased snowmobile use in response to timber harvest that was projected under the Proposed Action (100 snowmobile visitor days/year) is also predicted with this alternative.

Hiking

Walk-in hunting comprises 90 percent of the total hunting use and is currently estimated at 165 visitor days/year. It is projected at 180 visitor days/year with the increase in hunting use. An additional increase of 50 visitor days/year is predicted in response to wilderness designation and an improved trail system. As stated in the Proposed Action this increase represents a dispersal of use from nearby, heavily-used wilderness areas rather than new visitors.

Primitive Camping

Camping affiliated with hunting use is assumed to be 20 percent of that use. New camping associated with the wilderness use is predicted at 60 percent of that use.

Conclusion: Hunting use of the WSA is predicted to increase from 180 to 200 visitor days/year.

Snowmobile use of the WSA is projected at 100 snowmobile visitor days/year. The current use of 15 visitor days/year would be lost due to closure of Gobbler Knob Vehicle Way.

Walk-in/hiking use of the area would increase from 165 visitor days/year to 180 visitor days/year because of increased hunting use. Increased use associated with wilderness designation and a developed foot trail system is estimated at 50 visitor days/year.

Primitive camping use is estimated at 20 percent of the hunting use and 60 percent of the wilderness use. Projected camping use is predicted at 70 visitor days/year.

Total recreation use is projected at 370 visitor days/year.

Effects on Local and National Economies

Partial wilderness designation would permanently remove a potential annual harvest of 180 mbf, which equates to approximately 1.5 jobs and $37,500 in salaries to the private sector. About $9,000 in annual timber sale receipts to the U.S. Treasury would be forgone.

The value of the increase in recreation use (170 visitor days/year) is estimated at $5,100 annually. That increase was assumed to result from a dispersal of users from other local areas and not from new visits.

Conclusion: Under this alternative a potential of 1.5 jobs and $37,500 in salaries could be lost to the local economy. Income to the U.S. Treasury would be about $9,000 less, annually, than with a no wilderness designation.

Increased recreation use would have a value of $5,100 annually. Although there would be no impact on local and regional economies because of the local nature of current and projected uses.

Effects on Fire Suppression and Management

Limited fire suppression, including no motorized ground equipment, would be used on approximately 6,170 acres (the 5,870-acre proposed wilderness area and approximately 300 acres of riparian area outside the proposed wilderness area). Restricted suppression methods combined with increasing fuel buildup, limited access and rugged topography would increase the potential for a catastrophic fire. Consequently, the average size and suppression costs of fires occurring in the area would likely be greater than for historical fires. The result could be a more severe impact on resource production and use, both private and public.

Full fire suppression involving the use of mechanized (ground disturbing) equipment would be allowed on approximately 5,210 acres outside the Wet Cottonwood Creek drainage (excludes approximately 300 acres of riparian areas). Improved access through roads constructed for timber harvest would help reduce fire suppression costs and the threat of a fire spreading onto private lands and high-value public lands.

Prescribed fire would be used in timber management (approximately 1,900 acres of slopes greater than 40 percent) to dispose of slash and prepare logged sites for reforestation. The burning reduces fuel and minimizes the potential for catastrophic fire.

Conclusion: Limited firefighting on the area recommended for wilderness (5,870 acres) and on approximately 300 acres of riparian areas outside of the proposed wilderness area would preclude the use of motorized, ground equipment. There would be a greater potential for major fires due to restricted fire control and increasing fuel buildup. Under wilderness management (considering also limited access and rugged terrain), the suppression cost and size of the average fire could be greater than occurred with historical fires. In turn, a greater loss (though temporary) of resource production and use could be expected.

Full fire suppression and the use of prescribed fire on approximately 5,210 acres would reduce the possibility of a catastrophic fire.

Prescribed fire would be used on slopes greater than 40 percent to remove slash and prepare logged sites for reforestation.

QUIGG WEST WSA

PROPOSED ACTION (ALL WILDERNESS) ALTERNATIVE

Effects on Wilderness Values

Wilderness designation of the 520-acre tack-on WSA would afford legislative protection to its wilderness values. The area would be withdrawn from timber harvest, mineral entry, and oil and gas leasing. The wilderness values of solitude, naturalness, supplemental values, and opportunities for unconfined recreation within the 520 acres would compliment the values on the adjacent 60,000-acre Forest Service RARE II study area. Sights and sounds from the nearby Rock Creek road (about one-half mile south) could detract from the wilderness experience. These detractions would be evident only from ridgetops and would not constitute a significant impact. Topography and vegetative screening would preclude much of the detraction.

Conclusion: Designation would protect the wilderness values on 520 acres.

Effects on Timber Harvest

Wilderness designation of this WSA would permanently withdraw approximately 280 acres of Commercial Forest Lands (CFL) from timber production. The result would be the loss of potential harvest averaging 15 mbf/year. However, timber harvest would not occur under a no wilderness designation either by reason of administrative decision in the Garnet RMP/EIS.

Conclusion: Wilderness designation would not adversely affect timber harvest on the WSA.

Effects on Exploration for and Development of Metallic Minerals (Primarily Gold and Silver)

Wilderness designation would withdraw the 520-acre area from mineral entry, and the opportunities for exploration and development of mineral resources would be foregone. The WSA has a moderate potential for occurrence of metallic metals.Two companies have done some exploration about 10 miles south of Quigg West WSA, and some active claim staking is occurring approximately 4 miles SE of the WSA. There are no claims in the WSA and the geology of the WSA does not indicate a high probability of mineral occurrence. Consequently, the prediction for minerals exploration and development in the foreseeable future is little to none.

Conclusion: The withdrawal of 520 acres from mineral entry would have no impact in the foreseeable future on developing the mineral resources of the WSA.

Effects on Oil and Gas Exploration and Leasing

Withdrawing the WSA from leasing would forego the possibilities of oil and gas exploration and development on 520 acres. Geophysical data indicate a moderate probability for oil and gas resources occurring on the WSA. Wilderness designation would probably have no significant impact on development of its oil and gas resources. Even without wilderness designation, leasing and developing the oil and gas resources of the WSA would not be expected because of a low potential for discovering marketable reserves, an unfavorable economic return and the remoteness and ruggedness of the area.

Conclusion: Wilderness designation would not adversely affect oil and gas development on the WSA. Even if the area was open to leasing, several limiting factors including a low potential for discovering marketable reserves of oil and gas would support a prediction of no development in the foreseeable future.

Effects on Wildlife Habitats and Numbers

Big Game Species

Wilderness management would maintain a natural mixture of security habitat and forage, cover and travel components. Big game use of the WSA (which is part of a larger area of use) would not be expected to change much with wilderness designation. Bighorn sheep, elk and mule deer numbers would probably remain at current levels. The expected increase in visitor use (see Effects on Recreation Management) would cause negligible disturbance to big game animals.

Conclusion: Wilderness designation for the WSA would have no adverse effects on wildlife.

Effects on Recreation Uses (ORV, Snowmobile, Hunting and Primitive Recreation)

Wilderness designation would attract those seeking a wilderness experience, although the WSA's small size would

limit its attractiveness. Even as a tack-on to the larger Forest Service RARE II proposed wilderness, high use of the WSA would be unlikely. Its recreation and wilderness values are no more outstanding than those of surrounding areas. Other limiting factors are the rugged terrain and lack of access. If the WSA were given wilderness status, visitor use would be projected at 50 visitor days/year, which is double its current estimated use. All of the current use is assumed to be hunting. Hunting and opportunities for primitive and unconfined recreation would likely be the principal uses if the WSA became a wilderness area in conjunction with the larger Forest Service area.

Conclusion: Under wilderness designation visitor use is expected to double, going from 25 visitor days/year to a total of 50 visitor days/year.

Effects on Local and National Economies

A potential annual timber harvest averaging 15 mbf would no longer be available. This figure equates to one part-time job with $3,475 in salary to the private sector and $750 in timber sale receipts to the U.S. Treasury. Increased recreation use would generate about $750 annually to the local economy.

Conclusion: Wilderness designation would have a small impact on local, regional and national economies. A potential part-time job (timber related) with approximately $3,500 in salary would be forgone. The potential $750/year to the U.S. Treasury in timber sale receipts would be lost.

Increased recreation use would have a value of $750 per year. This use is assumed to result from dispersal of users from local areas and would not affect local and regional economies.

Effects on Fire Suppression and Management

Wilderness designation and the resulting limitations on fire suppression activities (no motorized ground equipment) and unrestricted fuel buildup could be conducive to a catastrophic fire. Present planning, however, calls for limited suppression of fires. In addition, the area is so small that escalation of a fire to a major incident before full suppression could be applied is unlikely, unless the direction of spread were north into the U.S. Forest Service RARE II area. Although topography would limit access to some extent, most of the area is accessible to mechanized equipment in case of fire threatening human life or adjacent property.

Conclusion: Only limited fire suppression, including no motorized ground equipment, would be authorized.

NO WILDERNESS ALTERNATIVE

Effects on Wilderness Values

There would be no significant effect on existing wilderness values. The WSA is administratively withdrawn from timber harvest by land use decision in the Garnet RMP/EIS. Mineral exploration and development and oil and gas leasing are not likely. There are no surface disturbing activities proposed in the WSA and, therefore, no impacts are expected to the wilderness values of solitude, naturalness and primitive and unconfined recreation.

Conclusion: There would be no significant impact.

Effects on Timber Harvest

The approximately 280 acres of CFL were set aside from timber harvest by administrative decision. Albeit, considering the small sustainable yield (average of 15 mbf/year), the remoteness and ruggedness of the area and the expense of developing the isolated CFL, managing Quigg West WSA for timber production would be impractical. Therefore, this alternative would have no impact on utilizing the timber resource of Quigg West WSA.

Conclusion: There would be no impact to timber harvest on the WSA.

Effects on Exploration for and Development of Metallic Minerals (Primarily Gold and Silver)

Under this alternative, the 520-acre WSA would be open to exploration and development of the mineral resources. Should a claim be located and development proposed, a Plan of Operation would be required under 43 CFR 3809 relative to road closure areas. The claim would be checked by validity exam. Even though geochemical data indicate a moderate potential for discovery of lode and placer gold, past production indicates little probability of finding developable deposits. Lack of historic production, a suspected low probability of developable mineral deposits, cost of developing a claim and ruggedness of the terrain are expected to limit interest in future mining of the area.

Conclusion: There would be no impact predicted in the foreseeable future on exploration for and mining of metallic minerals.

Effects on Oil and Gas Exploration and Leasing

The 520-acre WSA would be open to oil and gas leasing but with a no-surface-occupancy stipulation for the entire area. Furthermore, geophysical and geochemical data indicate a low probability for the occurrence of oil and gas. Because of a low potential for occurrence, low return on investments, ruggedness of the terrain and no surface occupancy, interest in leasing would be forecast as low. Consequently, no leasing in the foreseeable future is expected. Impacts to oil and gas development under this alternative would not be much different from impacts under the Proposed Action (All Wilderness) Alternative.

Conclusion: There would be no impact predicted on oil and gas leasing and exploration.

Effects on Wildlife Habitats and Numbers

Big Game Species

Under this alternative, habitats would be managed to protect existing habitats in accordance with MA 9 objectives and guidelines. Big game (bighorn sheep, elk and deer) numbers would be maintained at current levels.

Conclusion: Numbers of bighorn sheep, elk and deer using the area would probably remain at current levels.

Effects on Recreation Uses (ORV, Snowmobile, Hunting and Primitive Recreation)

The 520-acre WSA would continue to be closed to motorized vehicle use, primarily due to rugged terrain and possible soil erosion. Opportunities for primitive recreation use would be afforded under this alternative. There would be a minor increase over time in primitive recreation use going from the present level of 25 to 35 visitor days/year.

Conclusion: There would be no impact on ORV and snowmobile use. A national increase in demand for primitive recreation could increase visitor use of the WSA from 25 to 35 visitor days/year.

Effects on Local and National Economies

The economic impacts of administrative withdrawal of the WSA from timber production would be the same as those discussed under the economic effects of wilderness designation. Increased recreation uses would provide about $300 annually to the local economy.

Conclusion: Impacts on timber related incomes would be the same as described under the Proposed Action.

Increased recreation use would provide about $300 annually to the local economy.

Effects on Fire Suppression and Management

Under non-wilderness designation, the Quigg West area is administratively assigned a limited suppression allocation. Therefore the impacts would resemble those described for the Proposed Action (All Wilderness) Alternative.

CHAPTER 5
CONSULTATION AND COORDINATION

This environmental impact statement (EIS) was prepared largely from information contained in the Garnet Resource Management Plan and Environmental Impact Statement (Garnet RMP/EIS) and wilderness inventory files. TheRMP/EIS was prepared by an interdisciplinary team of natural resource specialists from the Garnet Resource Area and the Butte District offices. Beginning in December 1980, a nine-step process led to formulation of the RMP/EIS. Four of the nine steps allowed for public review and comment. This BLM planning process is outlined in Appendix A. Consultation and coordination with various agencies, organizations, and individuals occurred throughout the planning process. The wilderness review process and resulting nominations for wilderness study are discussed in Chapter 1.

CONSISTENCY

The BLM's planning regulations require that resource management plans be "consistent with officially approved or adopted resource related plans of other federal agencies, state and local governments, and Indian tribes, so long as the guidance and resource management plans are also consistent with the purposes, policies and programs of federal law, and regulations applicable to public lands ...." Interested parties have been notified and their comments solicited.

The State Historic Preservation Officer and the Advisory Council on Historic Preservation were given an opportunity to review the RMP/EIS. Also, the Governor's Task Force on planning was briefed in September 1984 and October 1985.

PUBLIC PARTICIPATION

Public input and resource values led to the inclusion of the WSAs in the RMP/EIS. During the wilderness inventory conducted in 1979, public meetings were held in Missoula, Drummond, Ovando, and Philipsburg, Montana. A federal register notice was published on February 20, 1981, that announced the formal start of the RMP process. The contents of this document were prepared using the RMP/EIS as a base document. As a result, most of this section is comprised of public involvement with the RMP/EIS.

A preliminary list of 17 major issues dealing with resource management over the entire resource area was mailed to about 600 individuals and organizations for comment in February 1981. Open houses on the issues were held February 25, 1981, in Drummond; February 26, 1981, in Missoula; March 3, 1981, in Philipsburg; and March 5, 1981, in Ovando. The District Advisory Council reviewed the preliminary issues and the public response to them in March 1981. As a result of the input from about 100 persons who attended the open houses and 60 written comments, issues were redefined and three new ones were added. These were published for further public comment in November 1981. These were grouped into five broad issues from which the plan was developed. The final list was published in August 1982.

One major issue dealt with the following questions: (1) Which wilderness study areas or portions if any, are suitable for designation as wilderness, and (2) how should the WSAs be managed if they are not recommended for wilderness?

Resource inventories were conducted in 1982 and 1983, and a management situation analysis was prepared that examined the capability of the public lands to accommodate the needs and issues previously identified. The criteria for developing the RMP/EIS and the District Manager's Concept were published for public review in July 1983. Five comments were received.

In early 1984, work began on the formulation of alternatives. Resource specialists aided in the development and made suggestions on resource allocations leading to the analysis of alternatives as laid out in the draft RMP/EIS.

After the draft RMP/EIS was filed with the Environmental Protection Agency in December 1984 and released to the public, a period of 90 days was allowed for public review and comment. The Federal Register of December 14, 1984, carried a notice of availability and announced a public hearing and two open houses at Missoula and Drummond, Montana on February 13, 1985, and February 20, 1985, respectively.

A news release published on December 16, 1984 announced the availability of the draft RMP/EIS and gave a summary of the document. This release, which gave the times and locations for the hearing and open houses, was sent to national wire services, daily newspapers, weekly newspapers, radio stations, and television stations throughout western Montana.

Approximately 400 copies of the draft RMP/EIS were distributed to government agencies, businesses, organizations, grazing lessees, and interested individuals. Public reading copies were available at BLM offices in Washington D.C.; Billings, Butte, and Missoula, Montana; the University of Montana and Montana State University; and the public libraries in Mis-

soula, Granite, and Powell counties (see following distribution list).

Seven individuals testified at the hearing in Missoula and 47 comment letters were received by the close of the comment period. Written comments pertaining to wilderness and responses to those comments are reproduced in this chapter. Other informal coordination with the public took place throughout the planning process by personal contacts, phone calls, etc.

The draft RMP/EIS was distributed to the following for review and comment:

Federal

Montana State Office, Billings
Butte District Office
Regional Forester PP&B, Msla.
District Ranger
- Seeley Lake
- Lincoln
- Philipsburg
- Missoula

USDA Environmental Management Division, Missoula
Soil Conservation Service, Bozeman
U.S.G.S. Environmental Affairs, Reston
Fish & Wildlife Service, Billings
Bureau of Indian Affairs, Portland
National Park Service, Denver
BLM
- Santa Fe
- Moab
- Susanville
- Kremmling
- Glenwood Springs
- Alturas

Lolo N.F. Planning Officer
Lolo N.F. Public Info. Officer
Supervisor, Deerlodge N.F.
USDA Agricultural Stabilization & Conservation, Bozeman
USDA Coop. Extension Service, Msla.
USGS Oil & Gas supervisor, Billings
EPA, Helena
National Park Service, Omaha
USDA, SCS, Bozeman
USDA Farmers Home Administration, Msla.
National Bison Range, USDI, Moiese
Terry Loyer, Craig, Co
USGS Environmental Affairs
FWS Environmental Coordination
Bureau of Mines, Mineral Data Analysis
MMS, Offshore Environmental Assessment Division
Bureau of Rec., Environmental Affairs
NPS, Div. of Environmental Compliance
EPA, Region VIII, Denver
Bolling AFB, Environmental Planning
DOE, Office of Environmental Compliance
Asst. Secty. USAF, Pentagon
US Army Corps of Eng., Missouri River Div., Planning Div., Omaha
US Army Corps of Eng., N. Pacific Div., Portland

State of Montana

Dept. Health & Envir. Science, Water Quality Bureau
Fish, Wildlife & Parks Information Service, Helena
Montana Dept. of Highways
SW Area Forest, MT DNRC
Fish, Wildlife & Parks, Missoula
Soil Conservation Service, Deer Lodge
Montana Assn. of Conservation Districts, Sunburst
Director, Fish, Wildlife & Parks, Helena
Department of State Lands
MT Dept. Natural Resources, Water Rights
Hank Goetz, Lubrecht Forest
Montana Assn. of Conservation Districts, Helena
Montana State Clearing House
Montana Div. Health & Environ. Sciences
Fish, Wildlife & Parks, Kalispell
Montana Dept. of Agriculture
Montana Dept. Natural Resources
State Forester, Missoula
Montana Board of Natural Resources & Conserv.
Montana Extension Service, Bozeman
Tim Gallagher, Asst. to the Governor

Legislature/Local & County Government

Senator Max Baucus
Senator John Melcher
Rep. Pat Williams
State Rep.
- Ben Hanson
- John Manley
- Bob Ream
- M. K. Daniel

Missoula Conservation District
Missoula Rural Conserv. Dist.

Granite Conservation District
No. Powell Conservation Dist.
Deer Lodge Valley Conserv. Dist.
Seeley Lake-Missoula Water District
5 Valleys Economic Development
Al Chase, Missoula Technical Center
Missoula County Commissioners
Granite County Commissioners
Powell County Commissioners
Flathead County Commissioners
Zane Murfitt, Mayor of Philipsburg
Missoula Planning Office
Gary Morehouse, Powell Co. Planning
Granite Co. Planning Board

Watershed

Montana Cattlemen's Assn., Helena
Montana Woolgrowers, Helena
Montana Stockgrowers Assn., Helena
Granite County Farm Bureau
Resources Conservation & Development Committee, Missoula
Public Lands Council, Billings
Outdoors Unlimited, Darby
Wilderness Society, Helena
Ed Dobson, Billings
Natl. Council Public Land Users, Grand Junction
Sierra Club, Sheridan, Wyo.

Environmental Interests

Institute of the Rockies, Missoula
Environmental Library, UM, Missoula
Outdoor Resources Center, UM, Missoula
Montana Wilderness Assn., Missoula
Montana Wilderness Assn., Helena
Wilderness Institute, UM, Missoula
Terry Sopher, Director, BLM Programs
The Wilderness Society, Washington, DC
DNRC Public Lands Institute, Denver
Natural Resources Defense Council, San Francisco
Sierra Club, Seattle
Environmental Info. Center, Helena
Nature Conservancy, Helena
Deer Lodge Valley Protective Assn., Deer Lodge
Upper Clark Fork Valley Protective Assn., Drummond
Clark Fork Protective Assn., Missoula

Timber Interests

Champion Timberlands
Milltown
Missoula
Plum Creek Timber Co.
Missoula
Seeley Lake
Col. Falls
Stoltze Land & Lumber Co., Col. Falls
Rich Hagen, Clinton
Dean, School of Forestry, UM, Msla.
Inland Forest Resource Council, Msla.
Burlington Northern, Seattle
Women in Timber, Champion International, Missoula
Montana Women in Timber, Deer Lodge
Montana Women for Timber, Helena
R. H. Scott, Seeley Lake
Pyramid Mtn. Lumber Co., Seeley Lake
Montana Lumber Sales, Inc., Missoula
Montana Loggers Assn., Kalispell
Dan Heinz, Butte
Louisiana Pacific Corp., Deer Lodge
Idaho Pole Co., Missoula
Leroy Christofferson, Missoula

Wildlife Interests

Western MT Fish & Game Assn., Missoula
Defenders of Wildlife, Missoula
Trout Unlimited, Missoula
Forestry Sciences Lab, Missoula
5 Valleys Audubon Society, Missoula
Flathead Wildlife, Inc., Kalispell
Dr. L. Pengelly, UM School of Forestry, Missoula
Missoula Vo Tech, Ft. Missoula Campus
Montana Wildlife Federation, Helena
Anaconda Sportsman Club
Wildlife Society, Kalispell
USF&W Service, Ecology, Billings
Terry Sopher, Director, BLM Programs
The Wilderness Society, Washington, DC

Butte District Advisory Council

Nina Smith
Ed Zaidlicz
Bob Boeh
Spencer Hegstad

Richard Ellis
George N. Engler
James Couture

Business/Utilities

Montana Chamber of Commerce
Missoula Chamber of Commerce
Missoula Electric Coop.
Montana Power Co., Butte
Blackfoot Tel. Coop., Msla.
Western Envir. Trade Assn., Helena
Pacific Power & Light Co., Yakima
Philipsburg Chamber of Commerce

Recreation/Preservation Interests

Montana State Historic Preservation Officer, Helena
Montana Historical Society, Helena
West. MT Ghost Town Society, Missoula
Garnet Preservation Assn., Missoula
Historical Research Assoc., Missoula
History Department, UM, Missoula
Geography Department, UM, Missoula
Center for Urban Affairs, NW Univ., Evanston
Anaconda Sportsmen Club
Montana 4x4 Assn., Bozeman
Ponderosa Snow Warriors, Lincoln
Marlin Tweten, Missoula
Dave Harrington, Helmville
Ed Spinler, Great Falls
Mountaineering Club, Missoula
Greg Lindgren, Clinton
Hellgate Motorcycle Club, Missoula
Sno-Sneekers, Thompson Falls
Pintlar Audubon Society, Anaconda
Harold Sculock, Great Falls
Oscar Pererson, Great Falls
Gene Zahrte, Seeley Lake
MT Outfitters & Guides Assn., Victor
Jack Atchenson, Sr., Butte
5 Valley 4 Wheel Drive Club, Missoula
Montana Snowmobile Assn., Missoula
Seeley Lake Driftriders
Margaret Adams, Great Falls
Dennis Lauritzen, Great Falls
John Moyses, Philipsburg

Minerals Interests

Champlin Petroleum Co., Englewood, CO
Montana Mining Assn., Missoula
Exxon Minerals, Missoula
Montana Barite Co., Missoula
Utah International Inc., Missoula
MT Bureau of Mines & Geology, Butte
Ethel Heaney, Philipsburg
T. T. Smith, E. Missoula
Peabody Development Co., Denver
Atlantic Richfield Co., Dallas
Conoco Minerals, Spokane
Alt & Hyndman Geologists, Missoula
Meridian Land & Mineral Co., Billings
Earthworks, Inc., Missoula
Noranda Exploration Inc.
Montana Mining Assn., Helena
Burlington Northern/Coal & Geothermal, Billings
Continental Oil Co., Denver
Thomas Keating, Billings
Clarence Wendel, Missoula
Hellgate Mineral Society, Missoula
Burwest, Missoula
Geoplan Inc., Missoula
Union Carbide Corp., Missoula
Cominco American, Garrison
Rocky Mtn. Oil & Gas Assn., Billings
Northwest Gold Inc., Philipsburg
Amoco Minerals Co., Spokane
Phillips Petroleum, Denver
Frank Trask, Jr., Deer Lodge

Libraries

Missoula County Library, Missoula
Granite County Library, Philipsburg
Powell County Library, Deer Lodge
Lewis & Clark County Library, Helena
Silver Bow County Library, Butte
Renne Library, MSU, Bozeman
University of Montana Library, Missoula

Grazing Lessees

Robert & Dorothy Bauer
Marvin L. Radtke
Benson Brothers
Sandy O. Reierson

Bignell Ranch Co.
Rocking Chair Ranch
Paul H. Bissonette
Leonard Sanders
Bonita-Clinton-Potomac Grazing Assn.
Wilton & Joann Shelley
C. N. Mannix Ranch
Kathryn Lyon Snead
Cochran Ranch
Dean Strand
Thomas F. Collins
Sunny Slope Grazing Assn.
Emmett & Kenneth Coughlin
Anne Sullivan
Sam & Carolyn Dennis
Tuning Fork Ranch
William Dingwall
Donald & Kenneth Vick
Dutton Hereford Ranch
Wales Brothers Inc.
Enman & Nakken Inc.
Ward Paper Box Co.
James C. Firestone
Fred Weaver
Geary Brothers
John Weaver
Joe Gillies
William S. Welles
Marlin D. Gilman
Richard Wohlers
Gimlet Creek Ranch
X Diamond Bar Ranch
Dan M. Graveley
Loubren, Inc.
Cliff Gravely
W. H. Zosel
Henault & Foster
Archie Henderson
Francis A. Hogan
Catherine & John Hollenback
Charley F. Hughes
Leonard Iverson
Wight Jensen
Jensen Ranch Co.
Joseph Industries
E. M. Keiley
H. H. Koessler
Kolbeck Ranches Inc.
Charles E. Lane
Land M. Lindbergh
Lingenfelter-Hansen Ranch
Mrs. Weggo C. Lund
Hans Luthje
John Luthje
Francis F. Mannix
Jerome Mattice
Mike McCormick
W. L. McIntosh, Jr.
R. W. McMahan
Allan A. Morrison
George M. Mungus
W. F. Murphy
Roger & Lois Nahrgang
Robert L. Neal
Nelson Ranch Co.
Pilgram Ranch
Donald J. Pocha
R V Ranch Co.

Media

International Logging News, Colville, WA
United Press International, Helena
Associated Press, Helena
Silver State Post, Philipsburg
Independent Record, Helena
Montana Standard, Butte
Philipsburg Mail, Philipsburg
Great Falls Tribune
Missoulian
KXLF Radio, Butte
KXLF TV, Butte
KECI Radio, Missoula
KECI TV, Missoula
KPAX TV, Missoula
KDXT Radio, Missoula
KGRZ Radio, Missoula
KUFM Radio, Missoula
KYSS Radio, Missoula
KYLT Radio, Missoula
KERR Radio, Polson
KOFI Radio, Kalispell
KGEZ Radio, Kalispell
KDRG Radio, Deer Lodge
KANA Radio, Anaconda
Tribune Capitol Bureau, Helena
Northwest Tribune, Stevensville
High Country News, Bozeman
Montana Trails Magazine, Missoula
Montana Magazine, Helena

Miscellaneous Interests/Individuals

Gary Eudaily, Missoula
George Wilcox, Clinton
Janice Krueger, Missoula
Jim Frost, Missoula
Bearmouth Chalet, Clinton
John H. Toole, Missoula
Dan Sletton, Anaconda
Mr. & Mrs. Thomas Clark, Bonner
Albert Sletton, Anaconda
Les Marcum, Missoula
Barney Bowles, Seeley Lake
Paul Richard, Helena
Ralph Skaw, Ovando
Ted Dodge, Conrad
James Quigley, Avon
Virgil Raeder, Seeley Lake
Dave Sterling, Seeley Lake
Skip Gillespie, Seeley Lake
Jim Marcil, Ovando
Gerald Delin, Townsend
Larry Copenhaver, Seeley Lake
Lorraine Gillies, Philipsburg
Robert Boucher, Blackfoot Freeholders, Bonner
Bruce Bugbee, Missoula
Louis Vero, Greenough
Louis Flake, Greenough
Lud Browman, Missoula
Steve Owens, Seeley Lake
Newman Raymond, Helmville
Karel Wilson, Deer Lodge
L. J. Blekkenk, Seeley Lake
Don Aldrich, Missoula
Woodrow Goodan, Seeley Lake
Doug & Rose Habermann, Bozeman
Frank Fitzgerald, Drummond
Allen Christophersen, Missoula
Miss Eddye McClure, Portland
Paul Brunner, Ovando
Bud Moore, Condon
Jim McDonald, Missoula
Dale Burk, Stevensville
Del Cameron, Clinton
Gary Frey, Missoula
Elmer Billquist, Anaconda
Mary Hamilton, Helmville
C. E. Engdahl, Boulder
Bill Maehl, Billings
Paul Richards, Boulder
Jay Stitt, Helmville
Ross Friede, Ovando
Bill Hill, Anaconda
Barney James, Anaconda
Dr. George F. Weisel, Missoula
Marty Onishuk, League of Women Voters, Missoula
Tony Robledo, USAF Civil Engrs., Dallas
Mrs. Lee Metcalf, Washington, D.C.
Herb Agal, Clinton
John Westenberg, Missoula
Ted Davis, Ovando
Donald Goodbread, Seeley Lake
Everett Miller, So. Philipsburg
Fred Stillman, Anaconda
Marilyn Whitman, Columbia Falls
Can Cainan, Seeley Lake
Mark Nonnenmacher, Missoula
Colin Moon, Seeley Lake
John Gross, Missoula
Michael McLane, Missoula
Kevin Suzuki, Missoula
Dave Janis, Helena
Thomas Pysher, Great Falls
Tari Conray, Conner

COMMENT ANALYSIS

Summary of the Comments

A total of 48 individuals, private organizations, and federal and state agencies submitted comments on the recommendations and/or analysis contained in the draft Garnet RMP/EIS. Oral statements were presented by three individuals or organizations at the public hearing in Missoula, and five letters were entered into the record.

The wilderness and/or reference to a specific area encompassing a WSA drew the most comments.

Most of the comments on the Garnet RMP/EIS came from Montana, and nearly two-thirds came from within the counties that will be directly affected.

Analysis and Review Procedures

All comments were reviewed and considered. Comments warranting responses were those that-

-related to inadequacies or inaccuracies in the analysis or methodologies used,
-identify new significant impacts,
-recommend reasonable new alternatives,
-involve disagreements on interpretations of significance, or
-indicate significant misconceptions or misinterpretations of BLM programs and policies.

Table 5-1 is a list of contributors and their corresponding identification number. The numbers assigned to the contributors correspond with those on the comment letters that follow. Testimonies given at the hearings that pertain to wilderness designation are reproduced at the end of this chapter.

TABLE 5-1
COMMENTS RECEIVED ON THE DRAFT RMP/EIS

	Identification Number
Federal Agencies	
None	
State Agencies	
Lubrecht Experimental Forest, Greenough, MT	9
Montana Department of Fish, Wildlife, and Parks, Region 2, Missoula, MT	11
State of Montana, Office of the Governor, Helena, MT	13
Businesses	
Atlantic Richfield Company, Denver, CO	14
Bignell Ranch, Helmville, MT	15
Blackfoot River Ranch Inc., Helmville, MT	16
Bonita-Clinton-Potomac Cattle Association, Clinton, MT	17
Champion Timberlands, Milltown, MT	18
Organizations	
Back Country Horsemen, Missoula, MT	22
Five Valley Four Wheelers, Missoula, MT	23
Montana Wilderness Association, Helena, MT	25
National Wildlife Federation Regional Executive, Bozeman, MT	26
Sierra Club, Bitterroot Mission Group, Missoula, MT	27
Individuals	
Merrill Bradshaw, Jocko, MT	29
Doug Habermann, Bozeman, MT	35
Marvin Hammer, Missoula, MT	36
John Hollenback, Gold Creek, MT	38
Charles Kay, Missoula, MT	39
May Nelson, Drummond, MT	44
Steve Stolp, Helmville, MT	45
Frank Trask, Jr., Deer Lodge, MT	46

Letters omitted were without wilderness comments. Portions of the accompaning letters that relate to wilderness are bracketed. The brackets indicate a response is required and have been assigned either a number or an alphabetical letter. The response to the bracketed comment will have the same number or alphabetical letter. The numbers refer to responses given to comments that did not require a change in text of the draft. The alphabetical letters refer to responses that resulted in a change in the text of the draft.

PUBLIC COMMENTS ON THE DRAFT RMP/EIS

Public input concerning wilderness will go forward in this document, with the BLM Montana State Director's wilderness recommendations to Washington for consideration by the BLM Director, the Secretary of the Interior, the President, and Congress.

Some of the letters could not be reproduced in their original form. These were retyped. Except editing of misspelled words or obvious errors in punctuation, most comments are printed verbatim.

RESPONSE TO PUBLIC COMMENTS

Authors Note: Reference will appear to Gallagher Creek WSA in the letters and responses. As noted in Chapter 1, Gallagher Creek was a 202 WSA that was released from further study in the Record of Decision for the Garnet RMP dated January 10, 1986. In light of that development, comments and their analysis regarding Gallagher Creek should be disregarded.

The reader will note references to the RMP/EIS (page numbers, appendixes, etc.). This was done because the RMP/EIS was the basic document from which this Garnet Wilderness EIS was developed. The references to the RMP/EIS are still appropriate as parts of the responses.

9a

Lubrecht Experimental Forest
Greenough, MT 59836
March 1, 1985

Mr. Dave Baker
Assistant Area Manager
Garnet Resource Area
3255 Fort Missoula Road
Missoula, Montana 59801

Dear Dave:

This letter letter is in regard to the "Draft Resource Management Plan" for the Garnet Resource Area. I am writing these comments on behalf of myself, Lubrecht Experimental Forest, Mike Hornbrook at the Lindbergh Cattle Company and Bill Fokker of the Elk Ranch.

After a review of the plan and our question and answer session with BLM staff members a few weeks ago, we are satisfied with the preferred alternative E. We agree with the proposed elimination of livestock grazing in the bottom and east side of the Elk Creek drainage. We feel that livestock grazing would be difficult due rugged topography and lack of remains, efficient livestock management in this area is not practically cost effective. We also concur with eliminating the Wales Creek drainage from formal wilderness classification. Although this area has features that are unique to the Garnet area, the size and general characteristics of the parcel are not conducive to formal wilderness designation. However we also feel that this area should be managed as a "Special Area" for the management of this reason to protect the fragile granitic soils and riparian areas. From our experience as land managers and land owners, we favor the flexibility in land management offered by a non wilderness designation.

1

In closing, we are gratified that the BLM not only undertook this long range planning effort but also that you have been very cooperative in involving adjacent landowners and the general public in the entire process.

Sincerely,

Hank Goetz
Manager

cc: Lynn Lindbergh
Bill Fokker

11a

Montana Department of Fish, Wildlife & Parks

3201 Spurgin Road
Missoula, Montana 59801
January 8, 1985

Mr. Darrell Bell
Bureau of Land Management
3255 Fort Missoula Road
Missoula, MT 59801

Dear Darrell:

Following are the considerations of the Region 2 staff concerning the Garnet Resource Area Resource Management Plan/Environmental Impact Statement.

Consideration should be given to keeping the wilderness study areas roadless based on the effect of such management on the timber and mineral base. The difference in timber output in the maximum wilderness alternative (A) and the two area wilderness alternatives (A & E) is 430 mbf/yr and 2600 mbf/yr, respectively. Unless deficit logging is a high priority, putting a little of the area into wilderness would probably save the taxpayers some money as well as because land management costs in the maximum wilderness alternative only makes 1000 acres available for mineral entry by 13.25, or 87.75 acres. A small price to pay for a little solitude.

You project a 11250+ increase in acres available for grazing, however, ADM's would increase significantly only under Alternative B and would decrease under Alternatives C and D with Alternative E on the preferred, middle-of-the-road choice.

For the above reasons and because fish, wildlife, visuals and outdoor recreation get some consideration under Alternative E, this is the alternative we favor.

The Department and BLM recently entered a cooperative fisheries management agreement on all BLM lands in Montana. One of the stated objectives were to develop a cooperative management plan for specific fisheries special concerns. Neither of these areas are addressed with specific plans of action in the present 10-year management plan. Cutthroat trout are found in 47.66 miles of the 67 miles of stream on the GRA. We recommend that goals be established to develop a cooperative plan with our agency to assess the purity of these populations and to develop a management plan for the protection of these populations which prove to be pure strain. A strategy should also be developed for protection of harmful flows to the most important streams in the GRA. This might also involve exercising federal reserve water rights.

11b

Mr. Darrell Bell
Page Two
January 8, 1985

The final area we feel should be addressed is in the development of economic values of the fisheries, wildlife, and recreation resources on the GRA. Economic values have not been engineered for any of the resources on the GRA and we believe they should be. There or four jobs are created in timber or mining as a result of this or that alternative, but no mention is made of economic values of the recreation, tourism, hospitality and service industries. These should be given equal treatment.

Thank you for the opportunity to comment. If you have any questions, feel free to contact us.

Sincerely,

Jim Vest
Regional Supervisor

JV/DW/jm
cc: Ken Redrobe

13a

State of Montana
Office of the Governor
State Capitol
Helena, Montana 59620

March 15, 1985

Mr. Dave Baker
Project Manager
Garnet Resource Area Office
3255 Fort Missoula Road
Missoula, MT 59801

Dear Mr. Baker:

The State of Montana appreciates this opportunity to review and comment on the Draft Garnet Resource Area Management Plan (Plan) and Environmental Impact Statement (EIS). Your agency's cooperation and presentation of the Plan to Montana's interagency planning task force is also appreciated. The attached comments reflect the task force's review and concerns regarding the Plan.

In general, provisions have been outlined in the Plan which allow specific activities to be implemented in an environmentally acceptable manner. There are, however, portions of the Plan where the effects of implementation are not clearly identified, and where the lack of quantitative information hinders the comparison of alternative management opportunities.

We hope that the Final Plan and EIS will provide a satisfactory consideration of the state's comments on these draft documents.

Sincerely,

TED SCHWINDEN
Governor

Attachment

13b

State of Montana
Office of the Governor
Helena, Montana 59601

MONTANA'S COMMENTS ON THE BUREAU OF LAND MANAGEMENT'S
"DRAFT GARNET RESOURCE AREA MANAGEMENT PLAN
AND ENVIRONMENTAL IMPACT STATEMENT

The Garnet Resource Area Management Plan (Plan) is well organized and comprehensive. The Plan's emphasis on qualitative rather than quantitative information, makes it difficult to compare alternatives presented in the Plan. There are additional concerns regarding the effect of the Plan's implementation on water quality, noxious weeds, monitoring programs, wildlife, and grazing. Specific comments on these and other concerns identified by Montana's interagency task force review follow.

Timber

While the 1976 "Environmental Analysis for Timber Management Plan" has apparently formed the basis for the 6.3 MMBF/YR timber sale goal for the Garnet Resource Area (GRA) (page 91), the total commercial forest land base on the GRA has since decreased. As a result, it is questionable what basis the 5% increase in the harvest rate is proposed by the preferred alternative. The Plan should clarify this rationale.

The Timber Production Capability Classification (TPCC) system used on the GRA is based primarily on the physical limitations of the site, while the economics of growing timber is not considered. The economic suitability of commercial timberlands, and the profits of managing for timber on a particular site should be an important consideration in the development of the GRA management plan.

While reference is made to the GRA's mandate to provide a sustained yield-even flow of timber, it is not stated whether the proposed cut under the preferred alternative is at, or below the GRA's sustained yield limit. This point should be clarified in the Plan.

On page 101, 1982 federal payments to Montana counties are listed. How these payments vary by alternative is not identified. It would be helpful if this was included in the Plan.

Page 41 of the Plan states that 1,352 acres of commercial forest land (CFL) would be harvested annually. If these lands are available each year, the entire CFL in the GRA would be harvested in 78 years whereas a 100-120 year rotation period is commonly associated with forest plans in Montana. An explanation of the shorter proposed rotation period for the GRA would be appropriate.

The proposed timber program and associated road construction, will decrease non-motorized recreation opportunity and big game habitat security. Considering that the demand for this type of recreation is steadily growing, the Plan should contain a commitment to a well enforced road closure program following the completion of logging activities.

13c

Grazing

The preferred alternative plans for a 35% increase in AUM's over the long-term, relying heavily on treatment range created by timber harvest activities. Most of this treatment range, however, is important elk summer-fall range. The final report of the Montana Cooperative Elk-Logging Study, in which BLM participated, concludes "...when previously inaccessible range becomes available to cattle, habitat effectiveness for elk may be seriously impaired." The recommendation also states that "Cattle use of newly logged areas which have been previously used by elk should be discouraged." The preferred alternative does not appear to have taken this recommendation into consideration.

Current BLM policy emphasizes the use of a systematic monitoring program to verify the need for livestock adjustments proposed on the basis of one-time inventory data. (for example, one-time inventory data from as long ago as 1962 is being used for this purpose by BLM today. To insure appropriate adjustments, the GRA should avoid using one-time inventory data older than 5 years, and should not use data beyond 10 years old.

Current grazing receipts received by the GRA are only about $10,500 annually. The appropriateness of pursuing $500,000 in range improvements, as proposed by the preferred alternative, should be further explained in the Plan.

Weeds

Although noxious weeds are targeted for control on the GRA, the proposed treatment of the problem is inadequate. The GRA is heavily infested with knapweed, requiring greater emphasis on the development of a long-term chemical and biological treatment program for its control. Without greater awareness and an effort to control the problem, continuing amounts of Animal Unit Months (AUMs) and potential reforestation areas will be adversely affected.

Noxious weed programs should be coordinated with local weed boards, as well as adjacent land owners.

Wildlife

Although important wildlife areas were identified and discussed in the Plan, the only significant commitments to wildlife habitat improvement involve timber sales. The Plan should consider additional independent wildlife habitat improvement measures.

Road closures provide significant wildlife security in previously logged areas, but remain only a mitigation measure. Road closures will not completely compensate for losses of wildlife security cover, especially during the hunting season.

4 The Wales Creek, Hoodoo-Gauger and Murray-Douglas areas are extremely important wildlife security areas. Although small non-commercial timber portions of these areas have been protected, timber production and associated roading is planned for many of these important areas. Additional consideration should be given to maintaining more of the existing unroaded wildlife security areas in these locations.

13d

Monitoring

Although the Plan commits to preparing specific monitoring plans for the forestry, wildlife, watershed, and range programs, it would be appropriate if the Plan identified target dates for implementation of the monitoring plans. For many of these resources, the existing data base must be strengthened or an adequate data base established before it can be confirmed that management prescriptions are effective. The development of basic management practices (BMPs) should focus on the evaluation of an adequate data base. Coordination of the development of monitoring plans should include coordination with adjacent land owners, as well as the Montana Departments of Health and Environmental Sciences (DHeS), and Fish, Wildlife and Parks (DFWP). The BLM is encouraged to use the BMPs developed during the 208 Water Quality Program, and proposed guidelines from the Montana Cooperative Elk Logging Study.

Sedimentation and Water Quality

The sediment production projections contained in the Plan, based on the GRA's limited data base, may not be realistic. While the projections may have been made using basic available methods, a few suspended sediments measurements taken on the GRA show much higher sediment loads and proportions. In addition, qualitative water chemistry data should be collected. Less emphasis should be placed on sediment data collection, unless sediment funding and time to develop a representative sediment sampling program is available.

The Montana DHeS has developed the following position statement regarding sediment yield. This position statement is intended to emphasize the importance or implementation of "reasonable" BMPs.

> increases in sediment yield as a result of land management activities may be in violation of the Montana Water Quality Act, Sections 75-5-301 and 75-5-605, MCA, and the Montana Water Quality Standards, Section 16.20.633 ARM, Subsections 1 (b-e) and 2. Decisions on the acceptability of predicted increases in sediment yield can be made only on a stream-specific basis. Factors to be considered include existing stream quality, water quality classification, the relative value of the stream fishery, the predicted loss of fish from the stream, and site-specific best management practices to be used in the stream's watershed. Information concerning the cumulative effects of land management activities on stream flow and fish habitat must be available before decisions can be made for public inspection. Land, soil and water conservation districts that do not give adequate protection to water quality and related fishery resources shall not be considered "reasonable" in the context of Section 75-5-306, MCA, Subsection 2 and Section 16.20.603 ARM, Subsection 11.

A copy of the BMPs for Silviculture and Roads from the Statewide Water Quality Management Plan, prepared by the Montana Department of Health and Environmental Sciences, October 1979, is enclosed for your information. It would be appropriate to reference these BMPs in the Plan, as they are intended to provide additional information to land managers, and to supplement land management activities.

13e

Mining and Water Quality

In addition to requirements addressed in the U.S. mining laws, federal agencies are responsible for reporting activities that might affect water quality in the state (red, Clean Water Act, 1977, Section 401, Title IV, Permits and Licenses, Certification).

Specifically, Section 401(a)(1) states that "...any Applicant for a Federal license or permit for any activity ...which may result in a discharge...shall provide the licensing and permitting agency a certification from the State..."

Acceptance of Notice of Intent to Conduct Mining Operations, Plans of Operations or issuance of some Special Use Permits that involve discharges without 401 certification may be in violation of the federal Clean Water Act.

With this in mind, we recommend that the BLM require applicants to provide complete documentation that state water quality permits have been secured before accepting their applications for activities on the GRA.

Land Adjustments

The preferred alternative states that 126,872 acres (87%) of the resource area is to be held in retention for public values, while 16,988 acres (13%) is available for disposal through exchanges or sales. Several of the tracts identified for disposal are characterized by high wildlife values, primarily elk and deer winter range (WR):

Silver King Ridge Elk WR and Calving Area	280 acres
Montgomery Gulch Elk and Deer WR	120 acres
Mollard Creek Deer WR	40 acres
Lavelette Ridge Elk WR	600 acres
Sluice and Antelope Creek Deer WR	520 acres
Limestone Ridge Deer and Elk WR	160 acres
Gough Creek Deer and Elk WR	40 acres
Bear Gulch Elk WR	160 acres
Bear Gulch Deer WR	160 acres
George and Dave Gulch Elk and Deer WR	160 acres
	2080 acres

The future disposal of these GRA tracts should be conditioned on obtaining lands in exchange that have equal or better wildlife values. Sale of the above tracts should not be considered.

AtlanticRichfieldCompany

14a

[illegible] Street
[illegible] 80202
[illegible] 7[illegible]

[illegible]

VIA EXPRESS MAIL

March 11, 1985

Mr. Dave Baker
Project Manager
Garnet Resource Area
Bureau of Land Management
3255 Missoula Road
Missoula, MT 59801

Re: Garnet Draft RMP and DEIS

Dear Mr. Baker:

Atlantic Richfield Company would like to offer the following comments on the Draft Resource Management Plan and Draft Environmental Impact Statement for the Garnet Resource Area in northwestern Montana. Atlantic Richfield Company has several thousand State and Federal acres under lease within Missoula, Powell, Lake and Flathead Counties. In addition to our lease acreage, Anaconda Minerals Company, a division of Atlantic Richfield Company, presently has 7,000 acres of mineral rights in approximately 1,000,000 acres in the counties mentioned above and extending into Sanders and Lincoln counties.

We have some concerns with regard to the Table 3-6, page 71 of the planning document. This table indicates acreage that is inferred to have high, medium, and low potential for energy and minerals within the Garnet RA. Given that the RA is located almost entirely in the Overthrust Belt, we were surprised to find that BLM does not believe that there are any areas with high potential for oil and gas. In April 1982, we submitted nominations for oil and gas evaluations to Mr. Ed Hanley of the Montana BLM State Office. In response to our request, we evaluated Missoula, Powell, and Granite counties for their energy and mineral potential. Our ratings showed that both Powell and Missoula counties, and a

14b

Mr. Dave Baker
March 11, 1985
Page 2

portion of Granite county, should be rated a 4 for oil and gas potential. Copies of the evaluations and of one of the rating forms we submitted are attached for your review. Our geologists indicate that they are still very interested in this part of Montana in terms of exploring for and possibly developing oil and gas. We believe that BLM should upgrade the potential ratings for these areas to reflect our comments. If you feel a discussion of our data is necessary, please call. We would be happy to meet with you.

One other major problem we found in the draft planning documents is that the acreage figures used in the various alternative discussions do not add up. For instance, on page 41 under Alternative E, it is stated that oil and gas leasing will be allowed on 1,000,000 acres of Federal land while the Federal mineral estate. Further it is stated that seasonal restrictions will be applied to 84,076 acres and NSO stipulations will be applied to 8,100 acres. The remaining 112,915 acres (which includes the mineral estate) will be subject to standard stipulations. However, page 44 of the planning document is inconsistent in regards to only 10,617 acres being subject to special stipulations and that 17,617 acres would be subject to standard stipulations. Therefore, we are confused as to which statement is correct and believe it is essential that this point be clarified in the final document.

We support the concept of leasing areas with minimum restrictions. However, we believe that the BLM should include a disclaimer statement in Appendix A, Management Prescriptions, under Management Goals, which points out that if it is found that certain stipulations are not necessary on a site-specific inspection basis, they should be waived. This would allow operations to continue in the future if it is determined that exploration could take place in a given area without the special restrictions. For instance, in Management Areas Nos. 5 and 6, it is possible that six year not return to the same specific area every year. Therefore, if a company plans operations in a area where the six year not stipulation is in effect for that year, the seasonal stipulation could be lifted for the duration of the drilling operation.

14c

Mr. Dave Baker
March 11, 1985
Page 3

In conclusion, if the recommended modifications and corrections are made to the proposed action, we believe that BLM will have prepared a reasonable Resource Management Plan. We have some concern, however, as to how BLM determined areas of high, medium, and low potential for oil and gas reserves. It is possible that changes should be made with regard to special management area proposals if it is determined that oil and gas potential outweighs those resource values which are being emphasized in the special areas. Further, if the recommendation of Alternative E appears that the entire RA is available for leasing with a minimum of No Surface Occupancy Stipulations. As long as the seasonal stipulations are reasonably applied to allow for an adequate operating window, we can support the BLM's Preferred Alternative.

5

Please feel free to contact us if you would like to discuss our comments in greater detail.

Sincerely,

E. R. Hanley

Enclosures - Rating Forms

15a

Bureau of Land Mgt.

We prefer Alternative E and feel that the additional forage created by Forest management practices should be made available for use by the livestock. We do not see the need for any additional areas with no many C.I.P.'s. wilderness areas close by.

Bignell Ranch
Helena, MT

Typed for reproduction in the final EIS

16a

Blackfoot River Ranch Inc.

Kenneth S. Coughlin
Ernest R. Coughlin
Ruby I. Coughlin
Jay Coughlin
Gene Coughlin

Helmville, Montana 59843

March 7, 1985

Bureau of Land Management

Missoula, Montana 59801

Dear Sir,

On behalf of the Blackfoot River Ranch Inc. we wish to protest the
6 proposed logging operation up Four Mile Creek drainage. We feel this
would affect the water shed which we rely on for our flood irrigation.

7 Also the access to Four Mile Creek is limited. Private landowners
have a written legal agreement which we do activate.

In the Blackfoot River Ranch's five mile grazing program the present fences maintained by us are adequate to keep cattle out. The fence between BLM and Champion ground is not adequate to keep trespass cattle out.

Sincerely,

Ernest R. Coughlin
President

Gene Coughlin
Vice President

Retyped for improved reproduction in the final EIS

17a

Clifton, Montana
Mar. 11, 1985

David R. Baker, Project Manager
Garnet Resource Area Office
3255 Fort Missoula Road
Missoula, Montana 59801

Dear Sir:

The Bonita, Clifton, Potomac Cattle Association prefers Alternative 6 from a livestock grazing view. We feel that with proper management by
1 both the Bureau of Land Management and the cattle association, that the projected increase in AUM production should be available in less than the twenty year period, realizing that a lot may depend on monetary funding for range improvements and our capability to help out with installation of range improvements.

We would comment on this resource management plan, we feel that there is adequate cover for deer and elk in western Montana already and can see no need for any additional wilderness areas as Bureau of Land Management ground.

We believe that the timber management has been okay in the past and believe that it could continue as is the past.

The members are concerned about noxious weeds becoming more of a problem every year and more attention should be given them.

Sincerely,

Bonita, Clifton, Potomac Cattle Association
Bernard J. Weston, Sec. Treas.

Typed for reproduction in the final EIS.

18a

Champion

Mr. Dave Baker
Project Manager
Garnet Resource Area Office
3255 Fort Missoula Road
Missoula, Montana 59801

March 6, 1985

Dear Dave:

Decisions made regarding the present and future management of the Garnet Resource Area are of critical importance to Champion, its employees, and the economy of western Montana. Champion is a major forest landowner in the Garnet area with approximately 30,000 acres (Champion or in class proximity ownership). Champion's Missoula, Montana operation employs 500 people, a remanufacturing plant, and a large 500 million square foot pole plywood plant in the Missoula/Frenchtown area. Champion also contributes a 1,100 ton per day pulp mill, located at Frenchtown, which is the only pulp mill in western Montana and requires both mill residuals and pulp logs from a wide geographic area for its continued operation. The mill is a major employer in the area and is commended about providing a healthful, satisfying, and productive working environment for our employees while assuring that natural land managers do a professional job in managing the publically-owned resources entrusted to their care.

I think you and your office did a fine job in preparing the Garnet Resource Management Plan. It was very difficult to put together a long-range plan which addressed both management issues and conditions than into a single plan. The summation of each Alternative at the beginning were especially helpful.

However, I am concerned over the difference in the allowable cut under Alternative 5 (emphasizing resource production) and the preferred Alternative 6. The difference in allowable cut between the two is attributed to the constraints placed by classifying 62% of the commercial forestland base as special management areas - mainly big game summer and winter range. I agree that the forests in Montana need to be managed with considerations given to wildlife management. However, timber harvesting should be viewed in a positive manner, not as a detriment to big game habitat but as a tool which can be used to improve habitat. Timber harvesting and silvicultural practices can be used as one of the only management tools needed to control elk and deer numbers. You have the opportunity to greatly increase big game populations and at the same time increase timber production. Jack Thomas, when writing "Wildlife Habitats in Managed Forests in the Blue Mountains of Oregon

and Washington," stated, "To is theoretically possible to produce a 900 percent increase in the ability of the land to produce elk in a totally forested land type." To achieve this it is necessary to convert, through timber harvesting, the forested landscape into 20 percent hiding cover, 70 percent thermal cover, and 10 percent forage areas. Forage areas are the limiting factor to elk production in the totally forested landscape. Forage areas can be created by fire but can be created in both short and long rotations. Thus, I believe you need to increase timber harvesting to obtain the recovery balance of thermal, hiding cover, and forage.

I agree clearcuts should be kept to a 40-acre maximum size for optimum wildlife management. However, I feel that shelterwood, tree selection, and clearcuts with reserve trees should not be restricted by size, but only by stand geographical and physical characteristics. Large shelterwoods do provide excellent forage, thermal, and hiding cover.

The security areas which will be maintained adjacent to timber sales should be put into planned harvest areas as soon as possible. This would be the time when the harvested areas have again achieved hiding cover (20 - 25 years).

I also feel that the reserve distance (600') between cutting areas is rather strict. This distance could vary between 100' and 600' which so harmful effect on wildlife.

1 I encourage you so limit the amount of acres to be allocated to wilderness only to the 900 acres adjacent to the Dodge Creek area. The other wilderness study areas should definitely not be considered for wilderness. Advantage of Alternative 5 would result in an annual timber volume loss to the forest products industries of 30% from Alternative 5 and a 15% loss from Alternative 6. With the return of these areas to management, productivity of both timber and wildlife will be increased.

We also analyzed the growth and yield information used in the derivation of the harvest levels as shown in Table 3-16. All future yields are derived from empirical growth and yield curves constructed from the 1973 inventory data. This approach generally underestimates SF yields in managed stands. Also, the growth and yield equations are stratified by age, harvest regime, and stocking (for partial cut regimes) only. Stand density, site, and other factors are not considered. It is difficult to assess the effects of various management without knowing the production potential of the areas involved. Certainly not all acres really grow on a Ponderosa site index = 40, which is assumed in the simulation data. A more intensive inventory of the timber resource and estimation of future yields by a modern stand simulator would provide a better basis for guiding management of BLM lands.

18c

Mr. Dave Baker
March 3, 1983
Page 3

In summary, I believe that you should approach timber harvesting with a positive attitude. As managers you must recognize that in order to manage your most he able to manipulate all the resources.

Regards,

Chuck Bailey
Forest Lands Coordinator

BJG-CB

22a

Mr. Dave Baker
Project Manager
Bureau of Reclamation Area Office
2880 Fort Missoula Road
Missoula, Mt. 59801

7 Columbine Road
Missoula, Mt. 59802
March 17, 1983

Dear Mr. Baker:

On behalf of the Issues Committee of the Back Country Horsemen of Missoula, we appreciate the opportunity to comment on the planning for the Garnet Resource Area. It was our feeling that the plan is a well prepared, clear and concise document. We found the planning approach useful and easy to understand. Alternative C, the option preferred by the BLM, is generally acceptable to us. There are four particular points which we believe merit further comment.

1 First, we support the BLM recommendation that only one of the study areas, Dolly West, be considered further for wilderness status. The Dolly Creek, Moose Mountain, and Gallagher Creek areas are important roadless areas which merit protection, but they do not possess wilderness qualities.

Secondly, we believe the towns of Garnet and Coloma must continue to be protected for the purposes of both historical preservation and recreational use. We want to compliment the BLM for the level of protection which has existed during the past years. At the same time we would strongly urge that the personnel doing this work not become the final arbiters of what is historically significant.

Thirdly, we believe the plan lacks a strong weed control emphasis. While recognizing that weed control is a complicated and expensive business, we believe it represents an important direction that planning and management cannot avoid. Spotted knapweed, leafy spurge, and others represent a very serious threat to these public lands. We believe an active control plan involving various control methods should be considered.

Finally, as backcountry horse users we have problems with fences. Since grazing is an important use of the area, we understand that fences are necessary. We also saw that as a factor which refuse from the horse use when such a limitation is unnecessary. To solve this problem we urge that the final Garnet Resource Area plan's standard that an adequate gate be included in every fence be implemented. This measure would cost little or nothing. In addition a gate should be installed on the major roads. We believe this is economically feasible and will allow multiple use.

Thank you for the opportunity to respond to the proposed plan. We would like to be informed of the details of the final version.

Sincerely,

Philip T. Jayne

cc: Nancy Chandler, President, 6635 S. Ave. W., Missoula
Jim Archer, Issues Chair, 1230 W. Kent, Missoula
Bill Brown, Issues Chair, 10005 S Orion Creek Rd., Missoula

Typed for reproduction in the final EIS.

23a

To the attention of the Bureau of Land Management,
Committee for the study of the Resource management Plan and
Environmental Impact Statement.

I am writing in response to the Garnet Resource Area Management Plan.

We are members of the Five Valley Four wheelers, a recreational organization.

We enjoy traveling the old back country roads, Jeep and Fire Trails and exploring old mine roads and sites.
The roads are not interested in, require little or no maintenance, and what repairs are needed could be done by volunteer groups such as ourselves. We would provide erosion control, brush and dead fall removal and non-motor repairs, required to keep a jeep road open for 4x4 travel.

1 The type of road we prefer to travel and enjoy the forests on, are quickly disappearing from the useable forests. These roads are being destroyed by how logging roads, they are being closed to year long travel, or they are being permanently then allowing the area to revegetate. Many roads that are in the Garnet Range Wilderness in the state of Montana and Idaho are closed using some of the lod established jeep trails for the motorized recreation.

User conflict is an expression we hear all almost every meeting we attend and read in most articles that are written concerning forest use. We have little or no conflict with other users because of the fact that we see the area, compared with the time of year others are there areas.

A little common courtesy and mutual respect would solve most conflicts by the users anyway.

During the management plan development we would like you to take old roads into consideration when planning a new logging site or closed roads. We would like to see the old roads left periodic and close the new ones if necessary.

A few specific roads we are interested in are. The Cow Wallace Road off of the Ninemile Road, the Ninemile Creek Road, Ninemile via the original road the Chamberlin Creek Road out to Jocity Ranch Bridge, the Road across the Dam, The Wales Creek Road, the Elevation Mountain Five Road, Deep Creek Road, Douglas Creek Road down Weasel Gulch to Rattler Gulch.

We want to thank you for your consideration and if you are interested in any of our organization doing any volunteer work on any of the above mentioned roads, feel free to contact either Mike or Kathy Whitman at 728-8033 or write to us at 420 West Central.

Mike Whitman, Pres. Five Valley Four wheelers
Kathy Whitman, Sec. Five Valley Four Wheelers
420 West Central
Missoula, Montana 59801

25a

Written Testimony of Tom Sowell representing the Montana Wilderness Association.

I speak for my personal viewpoint as well as that of M.W.A. At least I assume I am still representing M.W.A. officially.

1 We support Alternative C, the maximum wilderness alternative, for the Garnet Management Plan.

The small areas proposed for wilderness should be so designated simply because they are the only areas suitable on the entire Resource Area. They are so small that there should be no opposition to their protection. The wildlife habitat may be managed by the BLM even if the areas are designated wilderness. The recreational potential of the areas are low.

The Moose Creek, Meadow, and Gallagher areas must receive the protection only wilderness can give them.

Thank,

Tom H. Sowell
M.W.A. Council Member
1000 Cedar Street
Florence, MT 59833
777-8222

Typed for reproduction in the final EIS.

26a

National Wildlife Federation

12 Gardner Park Dr.
Bozeman, MT. 59715
March 6, 1985

Mr. Dave Baker, Project Manager
Garnet Resource Area Office
Bureau of Land Management
3255 Fort Missoula Road
Missoula, MT. 59801

Dear Mr. Baker:

The National Wildlife Federation takes this opportunity to submit comments on the Garnet Resource Area RMP.

The National Wildlife Federation is the nation's largest private citizens' conservation education organization with affiliate organizations in all 50 states and two trust territories. The NWF and its state affiliates now have more than 4.2 million members and supporters with a broad spectrum of interest in natural resources and their professional management. The NWF state affiliate in Montana is the Montana Wildlife Federation, with dues-paying members in more than 4,000 Montana households.

The Montana affiliate reviewed the Garnet MA DGEIS in detail and has found a number of areas where the plan needs substantial improvement. As an organization whose members are interested not only in wildlife but in the proper management of all natural resources, the Federation exhorts the California Commissioners, Dept. Forestry relative to the Garnet Resource Area RMP. We support the Garnet's preferred alternative. This will, discussed proper range management, which the Federation certainly supports, but the proposed range improvements are not standard and are too costly. The cost of the proposed range improvements is $586,000 for a project total of $1,000 AUM's. On Page 189, the plan indicates that the AUM rate in 1984 was $1.37, or about $10,960 from all AUM's per year. This indicates that for gaining feed, the income to BLM, generated by the grazing system, returns only a fifth of the cost to the taxpayer for improvements. Interest at 10 percent a year, each year, for 10 nearly cost-ineffectiveness.

The Federation believes the present AUM rate to be unrealistically low and a burden to the taxpayer. Increase of less than $11,000 a year on an investment of more than a half-million dollars in range improvements would force any private businessman out of business in short order.

The Federal agency appears to overlook the fact that if the range is in poor condition, which it is, due to over-grazing, the beneficiary of this cheap grazing is being very heavily subsidized at taxpayer expense. If the agency is truly concerned about improving the condition of the range, we suggest the first step would be to increase the cost of the range improvements to the permittee who caused the range condition deterioration in the first place. This is not to suggest that the agency should be charging permittees for improvements on the range.

Conversely, BLM also estimates on Page 173 that "hunter days" on the Garnet MA generate some $573,243 to the economy in indirect benefits. If wildlife were subsidized at the same rate as grazing on the Garnet MA, this would mean an expenditure in excess of $72 million on wildlife during the period of the plan.

The Federation has interviewed a number of hunters and other

26b

-2-

8 recreationists who use the Garnet MA and we are inclined to believe your "existing use levels" are low. For instance, the plan estimates that 200 persons visited the Rocker Mountain area each year but information given us indicates that more people than that hunted the area in 1984, not counting other recreational users. The same can be stated for the Gallagher Creek area where BLM's plan puts the annual public use figure at 100 visitors (Page 259) and our checks with ranchers and others indicate that more than 40 hunters used that area on the opening day of the 1984 big game season alone.

9 What appears to be the proper management for the plan is that in one breath, BLM describes some of the elk and deer habitat in the Gallagher Creek/Rocker Mountains and Wales Creek areas as prime and critical, then apparently refuses to give these wildlife values any real consideration in the proposal. This is particularly disturbing to the elite members of the wildlife and program staffs, who are, understandably, described by BLM as "key elk areas", are a

10 paper tiger. Nowhere in the plan are any specific actions, practices which can only destroy these wildlife values.

While the Federation strongly supports proper range management, there is little in the plan to indicate that BLM has proper range management in mind.

On Page 3 under "livestock grazing," there is no listing of costs of range improvement and the return on the investment. In any business operation, this information is critical.

Proper range management is not even referred to in the plan's discussion of grazing, throughout the plan. Job involves the riparian areas are in poor condition. BLM's stated solution, voiced several times, is that "intensive grazing management is projected to improve the condition of the riparian habitat through increased bank stability and cover."

Nowhere in the plan is no mention of excluding cattle from riparian areas by fencing and, since it is not mentioned, we can assume that fencing is not in the proposed plan. Nor is any mention of cutting AUM's to allow riparian habitat to improve. That is left, "bad" This makes the use of "intensive grazing management" just so much rhetoric.

We might also point out that any AUM's allotted are a public, not a private, resource. Page 4 of the plan states, "Public lands are, or soon might, be viewed by ranchers, as the public lands are any adjacent landowner. To suggest, as the plan does on Page 231, that because an individual owns private land adjacent to public lands, he has special rights to that public land is philosophically and, probably, legally wrong. If the allotments are considered by BLM to be its private rather than in public ownership, then such "ownership" concept should be made a part of the proposed plan.

Over-grazing appears to be perpetuated in this plan. However, equally threatening to the values of this public resource are BLM's plans to greatly over-harvest timber on these public lands.

There is serious concern on our part that BLM has amassed a long and lurkey public record on the Garnet MA in its timber management program. A short drive through and past BLM lands that have been "harvested" under previous management plans, and a long, long, long-term and follow-up study is needed to determine how well the over-harvested BLM lands in the MA have or actually are reforesting? If BLM is

26c

-3-

9 using anything other than actual field data on regeneration to estimate regeneration rates as part of its maximum sustained yield allowable timber harvests, then the proposed cutting levels is faulted before the exercise even begins.

If BLM will provide the data on the regeneration capability and the MSY of its timber resource for Montana, we feel it will probably should not exceed 3 million board feet in the next 20 years, not the 4.7 million board feet proposed.

According to information on Page 91, BLM has sold 229,329 million board feet of timber since 1964 for a total price of $4,772,988, or about $21 per million board feet. BLM also states that it plans to harvest 4,700,000 board feet annually.

Conversely, BLM also estimates on Page 173 that "hunter days" on the Garnet MA generate some $573,243 to the economy in indirect benefits. If wildlife were subsidized at the same rate as grazing on the Garnet MA, this would mean an expenditure in excess of $72 million on wildlife during the period of the plan.

The Federation has interviewed a number of hunters and other

26d

-4-

11 gave no consideration to protecting those public values.

The plan calls for the removal of 210 miles of logging roads over the next 50 years, not 100 miles as the plan states. The planned

12 bitumen and gravel roads are 40 miles and 170 miles, respectively.

The Federation cannot see how it will be possible for BLM to adhere to the proposed objective for logging, "Logging roads miles lines while building 210 miles of logging roads into these areas to cut the projected 154 million board feet of timber.

The treatment accorded wilderness study, a mandated responsibility of the agency, is inadequate and inappropriate in many instances at best. In addition to removing three two areas from wilderness study status, the plan calls for roading and logging them, notwithstanding regarding any further consideration for protection. The wilderness study areas should remain in their present status until the Congress decides on their future.

"Three-week" to its mandated wilderness responsibility is one 200-acre parcel in the Garnet MA, the Sheep Creek Wilderness Study Area, with outstanding wildlife values. The same wilderness study area applied in BLM's proposal for the upper Gallagher Creek area where the only portion to be left unit is an area of rock slides.

The Federation has difficulty with Pages 291-300. The method of presentation is deceptive. The listing indicates that all wilderness study areas on the list are going to be added to the wilderness system. Nothing is further from the truth.

14 We feel this subject some objectivity. BLM should list the total number, size and location of wilderness study areas, the total agency recommendations for wilderness, the total number of federal lands in Montana and the total acreage of all lands in Montana. The percentage of wilderness acreage claiming and proposed should be calculated for the entire state, not just the federal lands therein.

15, Page 300 lists the Montana Wilderness Study Area largest deleting the National Park Service wilderness areas. Nowhere are these areas in national park classification and not subject to development or resource extraction, so, they really are not part of a full

16 wilderness discussion. We also recommend that Forest Service recommendations be included in such tabulations as well as the forest plans become public in the near future.

Page 327 (reference to Chapter 1, Page 68) recommends that listings under vehicle roadways on the Page 68 map be changed to foot trails. This change also should apply to Page 30, p. 57 and Page 68. There are no roads in the Gallagher Wilderness study area.

B Page 327 (Chapter 1, Page 68) the Federation is completely familiar with this BLM program and all of the ramifications. Under the plan, many parcels of land are scheduled for sale or trade which have high wildlife values. These include:

Beacon Area - 120 acres - high in value for elk and deer winter range, with more than 500 elk using the area extensively, S8,T9N,R8W.

George Gulch - 40 acres - High-use elk and deer winter range. S14,T9N,R8W.

Bear Gulch - 160 acres - high value deer winter range. S24,T10N,R9W.

Pole Creek - 200 acres - More than 100 elk use this winter range. S11 & 12, T10N, R9W.

Gough Creek - 40 acres - Good elk, deer winter range. S14, T10N,R10W.

Limestone Ridge - 160 acres - Elk, deer winter range. S22, T12N,R13W.

26e

-5-

Sluice Creek and Antelope Creek - 520 acres - all of this area is good deer winter range. 34,5S, 26W, R15W.

Lone Tree Ridge - 400 acres total - more than 100 elk use this area as prime winter range. 28S, 30, 25W, R15W.

Hellgate Creek - 40 acres - good deer winter range. 16, 25N, R15W

Montgomery Gulch - 120 acres - elk, deer winter range. 26, 26N, R14W.

Silver King Ridge - 280 acres - elk calving and winter range, with 300 elk using it. 20N, 29N, R14W.

The Federation would not object to trading these lands for "blocking" purposes but only if the lands to be acquired had substantially greater wildlife values. Failing to negotiate a trade under these conditions, BLM should follow the State Director Guidance and transfer ownership title to the Montana Department of Fish, Wildlife and Parks.

It is obvious to anyone knowledgeable about wildlife to note that most of the non-BLM lands in the Garnet RA which had timber at one time now have severely reduced wildlife values. Lands owned by the Champion Corporation and Burlington-Northern and those managed by the Department of State Lands have, in almost every case, been clearcut and have little wildlife value. Even the Forest Service, over-pressed, has retained the relatively few areas in this RA resource area that still contain moderate to high wildlife values. The direction BLM takes with its management of the agency's holdings in this resource area will determine the future of the area's wildlife resource.

The National Wildlife Federation requests the Bureau of Land Management to reconsider and address each of the points raised in these comments and to take action in the preparation of the final EIS on the Garnet RA accordingly.

Please keep us informed of your actions.

Sincerely,

Charles J. Griffith

Charles J. Griffith
BLM Regional Coordinator
Rc, Rockies Region

27a

BITTERROOT-MISSION GROUP
SIERRA CLUB
406 TOD MISSOULA, MONTANA 59807

March 13,1985

Mr. Dave Baker
Project Manager
Garnet Resource Area Office
3255 Fort Missoula Road
Missoula, MT 59801

Dear Mr. Baker:

The Bitterroot-Mission Group of the Sierra Club wishes to express sincere thanks for this opportunity to comment on the Draft Garnet Resource Management Plan and to submit the following comments.

We were impressed with the thoroughness of the analysis and the balanced presentation of issues that we found in the RMP. Nevertheless, we have some disagreements with the conclusions. For the most part, disagreements stem from differences in judgment concerning the weight that should be placed on certain resource values and the importance of these to the public.

1, Specifically, we cannot agree with the choice of Alternative E as the preferred alternative because we do not believe that it gives sufficient importance to the important resource value of wilderness and wildlife habitat.

9 Concerning wilderness we would like to make the following points:

1. Surveys show that the public demand for wilderness and the opportunity for primitive recreation in wilderness is increasing more rapidly than was expected only a few years ago. As a consequence many wilderness areas are being very heavily used. For example, the Lewis and Clark Forest reports that there were 28,700 days of wilderness recreation use in the Rocky Mountain Division of the Forest last year, although in 1981 it had projected that the Forest's wilderness areas in 1985 would handle only 17,000 days of wilderness recreation per year.

16 We do not believe that the increased public demand for wilderness recreation was adequately recognized in the draft RMP.

"Not blind opposition to progress, but opposition to blind progress."

27b

2. Relatively small wilderness areas, such as Wales Creek, Meadow Mountain and Gallagher Creek will become increasingly important as the usage of the larger and longer established areas continues to increase. These areas will provide opportunity for solitude that is still harder and harder to find in the more heavily used areas.

17 3. We do not believe that the fact, as stated in Appendix D, that "there is no need to designate these BLM study areas as wilderness totally to balance ecologic diversity" is a valid argument against wilderness designation. There are many wilderness values. Preservation of a wide range of diversity of ecosystems is only one, although we deem it an important one.

1 4. We do not believe that the establishment of special management areas provides adequate protection of wilderness values, primarily because such administrative designation offers no guarantee of permanence. The only method for assuring permanent protection of the wilderness resource is statutory designation.

18 5. It is well recognized in the draft RMP that management that would alline the surface character of the WSAs to be disturbed would result in irreversible degradation of their wilderness qualities. We do not believe that the short term benefits that might be realized by thus degrading the wilderness resource are a wise trade-off for the long term benefits of maintaining the irreplaceable resource that will become increasingly precious with the passage of time.

19 6. Finally, we do not believe that the fact that there are large acreages of wilderness quality lands outside of Montana alone has prohibited consideration of any wilderness as evaluation of the wilderness qualities of the BLM WSAs. These areas are not the property of Missoula or Great Falls residents, nor are they the property of the State of Montana. They are part of the federally owned public domain and belong to all citizens of the United States. The fact that they are located in Montana is incidental and irrelevant.

Concerning the impacts of the Preferred Alternative on wildlife we would like to make the following points:

1. Western Montana is a unique area that enjoys a special life style in large part because of its rich resource of wildlife and wildlife habitat. People come to Western Montana here in order to enjoy this abundance of wildlife by hunting and fishing, wildlife photography, or simply viewing and observing who they go afield. Additional thousands visit Montana each year in large part because of this special attraction. Any action that tends to diminish this unique wildlife resource degrades Montana and should not be taken unless there is a compelling reason. We contend that such a reason has not been found and compelling reason demonstrated in the draft RMP.

27c

2. THE SUMMARY OF THE IMPACTS OF THE ALTERNATIVES ON RESOURCES, page 111, states that Alternative E will result in varying impacts on wildlife on wildlife on 27,040 acres. We do not believe that such action is in the best interests of Montana or the United States. The meager amount of consumptive resources that might be produced by the proposed development actions is not sufficient compensation for such long-term degradation of the precious wildlife resource.

3. Chapter 3 of the draft RMP appropriately recognizes the importance of the Recreation Resource provided in the Garnet Resource Area and makes special mention of the Blackfoot Special Management Area and the total of 104,140 acres of cooperatively managed wall-in areas. The value of these areas depends in very large part on the opportunity provided to enjoy wildlife in a primitive setting. The wildlife resource provided by BLM administered public land is enhanced in these wall-in areas places a special responsibility on the BLM to maintain and enhance this wildlife resource. In our view, this responsibility is not adequately recognized by any of the five Alternatives. Even Alternative C, the Protection Alternative, would result in long and short term adverse impacts on fish and wildlife on 70,600 acres. We recognize that management would seek to improve wildlife habitat on substantial acreages due to intensive grazing management and management as wilderness. Nevertheless, it appears that the net result is certain to be a reduction in the wildlife resource.

Preference among Alternatives

Of the five Alternatives presented we would have to choose Alternative C, the Protection Alternative. However, we do not find it entirely acceptable, because of the net adverse impacts on wildlife as discussed above.

We hope that in revising the draft RMP a greater emphasis can be placed on wildlife which we believe to be the most important resource to be found on these publicly owned lands, and that an appropriate management alternative that will recognize the important value of the wildlife resource can be developed.

27d

We trust that these comments will be given serious consideration. They are offered in the spirit of constructive criticism. We feel we have to represent what we perceive as the best interests of both Montanans and United States citizens wherever they may live.

Sincerely yours,

James E. Curtis
Group Chair

29a

Greetings

Regarding the Garnet Resource Area, 10 year management plan.

Upon my initial study, a large portion concerns wilderness recommendations. Unfortunately I find your terminology generally negative towards this concept. Throughout the plan "wilderness" is seen as a "problem" to be "dealt with". Throughout the plan, mining, timber, logging, gas, oil, and mineral consumption have been and will be depicted as wildlands, people, animals, plants, air, and water. This country was mostly "wild" up until the turn of the century. Continued, radical, degradation of ecosystems will ensure the destruction of the biosphere. Let's face it; without temperate (200 plus years) considerations, this planet is going to die. Our planetary resources are finite.

Since the BLM is determined to design a plan for the next 10 years, I have some recommendations.

1. Willow Creek, Hoodoo Mt., Gallagher Creek, and Hogback would be designated "wilderness", as well as all roadless areas in this state. The road between Hoodoo Mt. WSA and Willow Creek WSA should be eliminated. Roads bring weeds, and decrease elk populations due to hunting pressures (Hogback, Willow Creek, Gallagher Creek, Hoodoo Mt., Fish, Wildlife, and Parks, 1985). 40 to 50 percent of the elk population will decrease if the "roadless areas" of the state are roaded.

Large ecosystems must be protected so all wild species have the opportunity to survive and migrate. Why not enhance areas for the reintroduction of past animals?

Bring back the grizzly!

Even though there seems to be a large supply of wilderness in the GRA (your opinion), more will benefit the growing populations.

1980 - 86,000
2000 - 147,000

Nonpolluting - low impact industries such as recreation, hunting, fishing, and outfitting, etc. brings a lot of direct and indirect revenue into this state. Tourism (people coming to the Garnet mountains) I consider acceptable. Habitat protection and access are concerns raised by conservationists, as well as recreationists.

2. Grazing should be reduced overall for several reasons.

a. It's another subsidy by the government (see papers).

b. Cows and sheep consume soil and eat plants down to stubble which doesn't allow for complete regeneration; too much, and we have desert.

3. If existing commercial forests are managed properly; thinning, select cuts, and regeneration (natural or hand plant), there is no need for opening up more forest lands. There are approximately 12 million acres of "commercial forests" in Montana. Sustained yield can work, if the "greed" factor of the timber industry would abate. Right now there is a large supply of timber that transgresses the northwest at the mills. In other words the timber market is slower than the past . . . flooded.

29b

Select cutting of small blocks with temporary roads and/or sky lines, and helicopters should be used. Access and rehabilitation (planting) must be held for by the logging contractors in full. No more timber deficits. Again, the fewer vehicles, the less transport of weeds (no spray).

Oil and gas exploration and development chaos must be immediate and direct solution from heavy machinery, spills, and pipelines next to open pit mining. Water tables, and aquifers are contaminated, and occurred. Our domestic sheep have tapered, we may need some 100 years down the road. These resources are finite.

Animals and water quality are usually disturbed, prime grizzly habitat is now being threatened near Hall Creek. Cyanide blasting pushes water into the aquifer, long from their traditional rengelands. Pristine water is now existing. Wilderness areas will become polluted from runoff and "fugitive" dust. Wildlife populations will decrease (fish). The list goes on. "Buffers" from development should be established.

5. Mineral exploration usually ruins most areas with the use of mills, tailings, heavy metals, and truck traffic. The impact of this activity in most cases is destructive. "Boom and bust" mentality prevails with some in this industry. Promises of short lived economic benefits are not substantiated. The Troy mine (state-of-the-art) is a prime example. Big mining activity ruins the landscape, and kills off many public lands holdings. Again, animal and water, and air will suffer for many generations if large areas are opened. Reclamation does not repair the damage of disturbed animals and people's well-being.

Conclusions

The main problem with our society is the notion of consumption. Resources are either commodities, or in the way, or time to regenerate (harvesting). Our planet is at a point where it is necessary to look 200 years ahead. The "boom and bust" mentality has to be replaced with respect to future generations.

Wilderness promotes multiple use in all aspects; from recreation for all ages to inspiration and low impact industries.

Wilderness helps us regain our ancestral ties to the land. They have shaped our lives, and our ancestors. Wilderness is the little of it left, 3 percent in Montana (less in the continental US).

Moderating industrial development will ensure a steady supply of resources for the future. "Wilderness" and roadless areas are the last remaining vestiges of ecological sanity. We as a world population must look at the big picture, and ask if we can continue at our present rate of resource consumption. Remember, you are working for us:

Sincerely,

Merrill Bradshaw
Black Sheep Ranch
500 Agency Rd.
Jocko, MT 59821

Typed for reproduction in the final EIS.

35a

Mr. Dave Baker
Garnet Resource Area
3255 Fort Missoula Road
Missoula, Mont. 59802

3-13-86

Dear Dave, et al.:

Thank you for the opportunity to comment on the GRA EMP. I know how much time and effort went into this document and I support most of the preferred alternative. I would like to submit the following comments as a concerned private citizen.

First of all, I believe that in Management Area 11, no grazing should be allowed. (1) This is a very small amount of land and its withdrawal would not significantly affect opportunity on any lease. (2) Cattle destroy wildlife habitat both directly by trampling open conifer, aspen, and shrub by the grazing pressure and indirectly by compaction, erosion, and other hydrologic effects promoted by hoofed stock. Wilderness areas should either be fenced or no grazing should be allowed around them. This is particularly true of Garnet and the other major mining ghost towns (i.e., Ophelia City).

Secondly, exactly where did the timber base data (GFL) come from? During what years did the foresters inventory the timber base? The Garnets have very slow-growing trees and I believe that 7,000 mbf is not a sustainable yearly harvest in the Garnets. Harvesting at this level would remove old-growth and push the entire resource area towards single-age stands. I also believe that more emphasis must be placed on pole-size commercial thin removal, and chaining of roads. Clean up the old mistakes and problem areas before new ones are created.

I also firmly believe that all of the Anderson Mountain west face above the Moore cabins and north face above the Mountain View Mill Road should be in Management Area 11. Clear-cuts on Anderson Mountain have already destroyed numerous historic sites and the archeological survey of Anderson Mountain should be completed before any more damage occurs. From personal experience, I know of many sites not even mentioned in the archaeological report that would be lost if timber sales proceed as planned. Anderson Mountain and the activities on it were an integral part of Garnet's history and will become an important cultural and recreation resource if left intact. Anderson Mountain has many hiking and cross-country ski opportunities that should be protected. The timber cutting should be limited to the lower slopes and should be done carefully on the upper mountain. Any timber cutting any where near Garnet should take into consideration Lubrecht and trail cross-country skiing possibilities and visual resources. Require loggers to provide suitable slopes by removing or reducing in height stumps and slash.

35b

I strongly support cultural and recreation resource management as outlined in the preferred alternative. Continued funding for Garnet Ghost Town, the Blackfoot and Clark Fork rivers management, and trails and walk-in hunting area management is essential to probably the most valuable resource in the Garnets over the long run. This should continue to be recognized in management of the GRA.

21 I object strongly to recommending about the entire amount of WSAs be dropped from wilderness consideration. I feel that it is inconsistent to list old-growth timber as a reason for nonwilderness classification. This type of area is not presently "well-represented" in the SWPS and the WSAs in the area would be excellent for changing this.

22 Wales Creek. This is an area that would be an excellent addition to the NWPS. Many other people feel this same way as shown by the substantial pro-wilderness public comment received when it became a WSA. I disagree that the roads into the area affect the naturalness of the area - you can get away from the roads and experience a pristine experience. In fact, you could even get lost there! As far as mineral's go, if there were any valid and mineable deposits there, the area would not be as untouched as it is now.

23 Gallagher Creek. This is a beautiful area with marginal timber resources when you consider the road building costs associated with accessing the old-growth timber. In particular, Mannix Park and the wilderness and wildlife values associated with it can only be protected by formal designation. I object to any use of recreation benefits derived from road building in the area. Only the road building is data or any other area in the Garnets. There is an over abundance of roaded recreation opportunities in the Garnets.

24 Hoodoo Mountain. Another area where wilderness designation would be best to protect the unique values of the area. Upper Cottonwood Creek is as valid an area you can find and should be wilderness.

Once again, I believe it is inconsistent with FLPMA and the multiple use Act to violate pristine areas such as Wales Creek, Gallagher Creek, and Hoodoo Mountain by roading and logging marginal timber areas. There is a lack of substantial mineral resources in these areas and public comment supports recommending these areas, especially Wales Creek, for wilderness designation. I heartily endorse your recommendation that Quigg West be designated wilderness.

35c

Finally, I support fully funded band management practices as put forth in Appendix D, "Best Management Practices". The IRA has well-qualified foresters who should stipulate that these practices be part of all contracts. Funding should be sufficient to allow for responsible timber sale layout and monitoring and site preparation and replanting after the sales.

Thanks again,

Doug Habermann
3609 West Tapscott
Bozeman, MT 59715

Typed for reproduction in the Final EIS.

36a

DAVE RANDY -PROJECT MANAGER
GARNET RESOURCE AREA OFFICE
3255 FORT MISSOULA,MONTANA 59801

DEAR DAVE,

AFTER REVIEWING THE BLM GARNET AREA MANAGEMENT PROPOSAL,I WOULD LIKE TO MAKE A FEW COMMENTS.

AS A SNOWMOBILER AND A CROSS COUNTRY SKIER, I CAN APPRECIATE THE MULT AREAS THAT WE HAVE TO ENJOY THESE SPORTS ON BLM LAND.

25 I AM IN FAVOR OF USING ALL PUBLIC LANDS FOR LIVESTOCK GRAZING AND COMMERCIAL TIMBER HARVESTING.WESTERN MONTANA NEEDS ALL OF THE JOBS IT CAN GET TO CONTINUE TO PROVIDE WORK FOR ITS PEOPLE. WITHOUT LUMBER JOBS MONTANA WILL BE A GHOST TOWN.I AM OPPOSED TO THE WAY THE WILDERNESS LOBBY OF PEOPLE CONTINUE TO PUSH FOR MORE ACRES OF WILDERNESS LANDS. THIS IS GOING TO TAKE AWAY MORE DAILY NEEDED JOBS IN THE MISSOULA AREA.

I WOULD LIKE TO SEE A FEW CHANGES IN THE SNOWMOBILE-CROSS COUNTRY SKI TRAILS AT GARNET. AS THIS AREA DEPENDS MONEY TO GROOM SNOWMOBILE TRAILS FROM THE STATE GAS TAX, I FEEL IT IS TIME THAT CROSS COUNTRY SKIERS PAY A FEE TO USE THE GROOMED CROSS COUNTRY SKI TRAILS. IN SOME STATES WHERE SKIERS USE GROOMED TRAILS, THE SKIER PAYS A LICENSE FEE WHICH GOES INTO FUNDING FOR GROOMING SKI TRAILS.

WE THE SNOWMOBILERS ARE FORTUNATE TO BE ABLE TO SNOWMOBILE ON PUBLIC LANDS. I HOPE YOU WILL ALWAYS CONSIDER THE RECREATIONAL SNOWMOBILER AS YOU MAKE FUTURE FOREST PLANS.

SINCERLY

MARVIN HAMMES
4705 MILLER CREEK ROAD
MISSOULA,MONTANA 59803

38a

2-20-86

1 I feel that Alternative E is the best workable solution. I am opposed to any more wilderness areas.

John Hollenback

Typed for reproduction in the Final EIS.

39a

Charles Kay
342 South 4th West
Missoula, MT 59801
Feb. 26, 1985

Mr. Dave Baker
Garnet Resource Area Office
3255 Fort Missoula Road
Missoula, MT 59803

Dear Mr. Baker:

This letter and its attachments are my comments on BLM's draft management plan/EIS for the Garnet Resource Area. My comments deal mainly with the eastern end of the Garnet Range - in the Hoodoo Mountain - Gallagher Creek - Mannix Park areas since I've had personal experience in that area for over 20 years. I also have BS and MS degrees in wildlife management, so my comments reflect both my personal experience and professional expertise.

As I stressed in my detailed comments which are attached, I am opposed to BLM's preferred alternative because, in my opinion, BLM has put too much emphasis and resources into timber harvest, road building, and livestock operations and not enough into wildlife and wildlife habitat.

9 BLM's handling of the Hoodoo Mountain and Gallagher Creek ACEs exemplifies their lack of concern for wildlife and especially elk.

Over the past 20 years, I watched all the private land surrounding these ACEs become roaded and logged. These ACEs are an island of vital escape cover that is completely surrounded by a sea of roads. The elk have been pushed into the lower areas back into the mountains in the logging and traffic laden areas. Even the Mannix Park area, which is 10 a much more favorable situation with the Mannix Park connecting elk back into the ACEs. But if the ACEs are roaded and logged as proposed by BLM there will be virtually no escape cover for this elk herd. The Elk Logging Study of which BLM was a part, demonstrated that elk must have adequate escape cover.

26 Since the entire area surrounding them have been extensively roaded, I recommend that the Hoodoo Mountain and Gallagher Creek ACEs be designated as wilderness to provide adequate escape cover for this elk herd. Moreover, I suggest that the Hoodoo Mountain and Gallagher Creek ACEs be combined into one wilderness area to afford more protection to the elk and for ease of management. Presently a "jeep" trail is all that separates the two areas and this road (which I have often driven) can be closed off without degrading the wilderness qualities of the area as the "jeep" trail is little more than a wide game trail.

Furthermore, I recommend that this wilderness area be expanded to the south (see attached map) to (1) protect all of Gallagher Creek, (2) protect more BLM land, (3) ensure more escape cover. This proposal

39b

would require BLM to trade other BLM lands for four sections of private lands - Sec. 7, 13, 17, and 19. This would form a core wilderness area of 22,000 acres of escape cover for elk and other big game animals.

BLM's draft plan calls for trading unstocked BLM lands for a blocking up of lands for better management. This proposal would stack up BLM lands and therefore make management easier. By trading for the lands BLM would also acquire the rest of Mannix Park. BLM already controls about half of Mannix Park and this land trade would protect this area. Mannix Park is over one and one-half miles long and is the largest grassland park in the area. Mannix Park has also been subjected to relatively light grazing pressure and is in good to excellent conditions, and on page 71 it states. I know of no other comparable areas in Montana.

I've discussed this proposal with former BLM biologist Mr. Bob Heatlwood. Mr. Heatlwood supports this concept and he has indicated to me that prior to his transferring from BLM, he contacted the private landowner in question and they were agreeable in principle to trading these lands for other BLM lands. Twenty years ago, Mannix Park was heavily used for hay and was a hub of activity. Now it is grown out to provide access for ACEs. Since that time, few at use the park. With BLM ownership and wilderness protection this could again be excellent elk habitat.

I thank you for your time and for your consideration of my comments.

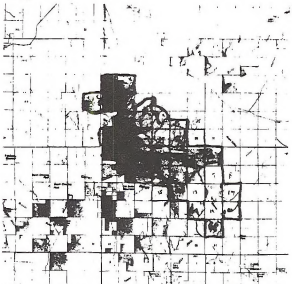
I am,

Sincerely yours,

Charles E. Kay

Typed for reproduction in the final EIS.

39c



39d

Detailed Comments on BLM's
draft Garnet Resource Area Management Plan and EIS

Page	
xiii	I support proper range management but BLM's proposed range improvements under their preferred alternative do not make economic sense. BLM states that cost of range improvements would be $800,000 for a project total of just over 8,000 AUMs. On page 110, BLM's 1984 rate per AUM was $1.37, 8,000 x $1.37 = $10,960 per year. $800,000 cost of improvements at even 10 percent interest = over $66,000 per year just to interest on the range improvements. BLM grazing fees do not even recover one-fifth the cost of the range improvements, let alone pay for the interest. I am opposed to any range improvements that are not cost effective e.g., pay for themselves. If the range is overgrazed and needs measures to improve its condition - the permit holder should pay all these costs, after all it is the permit holder who overgrazed our public lands in the first place.
9	Under "livestock grazing" the cost of range improvements and return on that investment should be a prime consideration. It presently is not listed.
92	Has BLM done any follow up studies to determine how well old logging areas are actually reforesting? I know of several clear-cuts in the 1960's have so to little tree regeneration. BLM's proposed logging plan is based on the assumption that the maximum sustained yield allowable timber harvest must be reduced. BLM should include field data on actual reforestation rates or old logged areas.
102	"Livestock grazing" BLM's grazing fees should be increased to reflect the actual market value of this resource. The present system is little more than a hidden government subsidy or welfare for the cattle industry. In the present era of budget cutting all parties should pay their fair share.
123	On page 91 BLM states that since 1944 they have sold 209,329 mbf of timber from the Garnet Resource Area. On page 123 BLM states that they plan to harvest 81,000 mbf/yr x $79 = 6,400 x $10,000 per year in timber receipts. On page 123 BLM states that the 30,000 "hunter days on BLM lands were worth nearly $900,000 per year plus nearly $900,000 more in indirect benefits. From BLM's own figures, clearly wildlife and hunting generate more economic benefits than do BLM timber sales and livestock grazing. Then BLM's preferred alternative should be to manage BLM lands for wildlife habitat and logging or livestock. Hence, EIS should revise this entire plan accordingly.

39e

PAGE

167 Exactly how is BLM going to improve riparian habitat? Is BLM going to fence the cattle away from the streams? For I doubt if anything else would work.

173 Under management guidelines item #1, as demonstrated by the above economic analysis - big game animals should be given priority on all ranges. On all winter ranges no livestock grazing whatsoever should be allowed.

12 175 I object to BLM's relinquishing WSA lands for roading and logging after they have completed this plan. WSAs should be managed in the present condition until Congress acts on their long-term status.

210-211, 215 Range Allotment #216 is prime big game winter range where no grazing should be allowed. This allotment should be cancelled and the area fenced to prohibit livestock. The number of AUMs should not be increased (pp. 213).

220 Public BLM AUMs should have no value to a private rancher. This is a public resource. If a private rancher private land decreases in value because he is excluded from BLM lands, so what? - he has absolutely no personal claim to public lands that belong to all people. This is just another form of welfare for a privileged minority. I suggest that this consideration be deleted from the BLM plan.

8 255 BLMs figures on visitor use of the Rendon Mountain area should be revised upward from the stated level of 200/year, since there were more people than that in there last hunting season.

260 Same comment as above - BLM says 100/year in Gallagher Creek - yet I met over 40 people in there on the opening day of big game season in 1984.

14 291-300 I find this section extremely deceptive. Listing all the WSAs gives the false impression that all those areas are going to be wilderness. Wilderness should be based on the total WSA acreage, not the total WSAs, total agency recommendations for wilderness, total federal lands in Montana, and total lands (all) in Montana. Forested wilderness should be calculated by the entire state not just government lands.

A 299 Table P-5 is good but I suggest deleting the WFS wilderness recommendations. Those areas are already in a National Park and not subject to resource developments - they are not really part of the wilderness question. Should also include the FS recommendations as the Forest Plans come out.

303-308 Under BLM's analysis all plan cattle operations are not economically viable. If this is true, why then or how do those people remain in the cattle business?

39f

PAGE

B 300- 314 Elk Logging Study Guidelines
These guidelines are excellent, what I question is BLM's ability to follow those guidelines to protect the elk at the same time BLM plans to log our lands and build over 200 miles of new road (pg. 113). My professional opinion is that it is impossible to do both at the same time. Under BLM's draft plan, I believe that elk and other game animals would be severely impacted.

327 Errata under Chapter 3 pg. 98
BLM says to change the vehicle roadways on the map on page 88 to foot trails. This also applies to pgs. 30, 32, 237, 268. There are no roads in the Gallagher WSA.

Typed for reproduction in the final EIS.

44a

24

Feb. 1, 1985

Dave Baker, Garnet Resource Manager

I'll introduce myself. I'm Ray Nelson, ranchers wife. Grew up at Seeley, have spent a good deal of time in the mountains in and around the Garnet area.

I'm writing in regard to the draft made for the Garnet Resource Area. I can live with Alternatives A or E.

I don't believe in wilderness areas, because it's public land. Only people like me, that can ride a horse or walk are entitled to see the beauty of our country? Why should the public be denied the beauty? Any public land should be open to everyone or closed to everyone. Kids a trail wide enough cycles, snowmobiles, 4-wheelers, horses, backpackers, or skiers could enjoy it without any harm to the environment. What's a wore path in an area this big? Game make paths, they're not unsightly. On the question of what a few outlaws, none of those motorized things hurt the land, they can be enjoyed by a person on foot. I know. Some have motorized vehicles and I have horses. I know that if I'm on horse stand and watch you go by, giving a little common sense anyone that has spent much time in the mountains knows you can't just take off up mountains, over rocks and fallen trees to chase the game or tear up the earth.

I can go along with the no mining, logging, or powerlines, etc. for the Garnet area. I don't believe in off the mountains go because they love and respect it. I think if all the people that would love to see these places and can't because they are inaccessible. The Bob Marshall is fine and I enjoy it, but it's enough for our area.

As for designating certain areas for cross-country skiers, snowmobilers, horsemen, or motorized vehicles I'm against for the same reason. We are adults or the majority of us are. We're not kids from the age of 6 to 16 that need to be entertained by game. There is no reason why everyone can't use the same trails or roads we get along. We can't, close them to everyone. I've been mountain hunting for over 30 years on horseback, cycles, foot, snowmobiles, and vehicles and never run into anyone disagreeable. And as long as people know this ground is for everyone they'll learn to live with it and get along as we have in the past or they'll go to a private area. Not. Let it be the people's choice.

Logging is a must, but I'm for selective cutting. I don't like the looks of clear-cuts unless the timber is infested. I agree with closing most of these logging roads. A hunter should be a sport and walk. There are enough roads open for hunters that can't walk. (I hate hunting.)

Cattle grazing is fine where there are allotments and not over grazed. As a rancher's wife I know you don't find many ranchers that do over graze, it's not to their benefit. We graze on public ground.

44b

And after having this outlined, I see where BLM might not be managing Western Montana but am sending this anyway. A note on the good side, I'd rather BLM manage this area than Forest Service.

Sincerely,

May Nelson

Drummond, Mont.

P.S. Forest Service signs that say, "Snowmobiles only, if there's snow", makes me sick.

Typed for reproduction in the final EIS.

45a

...III 2-20-85

RE CHOICE RECREATION AREA.

DEAR SIRS:

24 AS A LAND OWNER IN R13W, T13N, AND R15W T13N, AND ALSO AN OWNER OF A NUMBER OF UNPATENTED MINING CLAIMS IN THE SAME AREA, I AM DEFINITELY OPPOSED TO A WILDERNESS AREA AS OUTLINED IN ALTERNATIVE #6. THIS WOULD INTERFERE WITH MY FUTURE DEVELOPMENT OF MINERAL RESOURCES THAT I AM INTERESTED IN PURSUING IN THE FUTURE. ADDED TO THE PATENTED CLAIMS WOULD ALSO BE HAMPERED. IT WOULD ALSO BE A TERRIBLE WASTE OF THE TIMBER STAND IN THE AREA.

A MULTIPLE USE PLAN SUCH AS ALTERNATIVE E WOULD BE MORE ACCEPTABLE THAN ANY OF THE OTHERS. IN FACT IF IT IS CHOSEN IT SHOULD BE CHANGED.

JOHN A SHOFF
BOX 90
HELMVILLE MT
59843

46a

2-20-85 BLM Lands - Comments
Drummond - Garnet DMC

1 I. Small Tracts - Isolated

These should be sold. No way to fence them, police them, or tax them. They are often surrounded by over-owner private land and he uses them without paying taxes.

II. Wilderness

Areas designated (B) on the maps are too small for wilderness and much of it has been logged, grazed, or prospected and is not true wilderness.

III. Grazing

By all means continue but with good range management. How about a program of rotation where areas get a rest every few years?

IV. I notice that the small tracts near Pioneer are not classified for mining (16). The scene of the discovery of gold in Montana should be recognized!!

V. Oil and Gas

Leave all of it. Allow drilling anyplace. Some oil and gas would pep this country up!

VI. Timber and Big Game

Continual production. Mature forest is poor for game. Cut over areas produce more food for game.

Frank Tresk, Jr. - Deer Lodge

Typed for reproduction in the final EIS.

Response 1.

The alternatives are presented and the effects analyzed for Congress to make a determination on wilderness designation. Public response appears to be split between favoring and those opposing wilderness. The special management area allocations of the Garnet RMP/EIS are provisions that remain in effect until they are amended or until a new RMP is approved. The rational for selecting special management area and wildlife habitat emphasis allocations is covered in the Summary statement of this EIS. (Response to letters 9, 17, 18, 22, 23, 25, 27, 38, 46)

Response 2.

The effects of wilderness management on the timber, mineral, and other resource programs were analyzed in Chapter 4 and appendix o of the draft RMP/EIS. The Resource values were described in Chapter 3 and Appendix O. (Response to letters 11, 25, 46.)

Response 3.

BLM timber sale receipts in the Garnet Resource Area exceed costs and no congressionally appropriated money is used to build BLM timber sale roads. The sale purchaser builds all required roads as a cost of logging. Therefore, "deficit logging" incorrectly describes Garnet Resource Area timber sales. Every BLM timber sale throughout the years has been purchased. (Response to letter 11.)

Response 4.

The allocation of Wales, Hoodoo, Gallagher, Murray, and Douglas areas to MAs 4, 5, 6, and 9 and implementation of the guidelines are designed to maintain adequate security areas. (Response to letter 13.)

Response 5.

If the proposed actions for Wales Creek and Hoodoo Mountain WSAs are selected, seasonal stipulations would be applied on a case-by-case basis to protect wildlife values while allowing as much opportunity for oil and gas development as feasible. (Response to letter 14.)

Response 6.

The BLM uses Best Management Practices (techniques for controlling sediment production, for protecting vegetation, etc.) to meet its goal of maintaining water quality and stream channel stability in logged areas (Appendix C of this EIS). Therefore, adverse impacts to the Yourname Creek watershed are not anticipated. Also see the monitoring plan in Appendix U of the draft RMP/EIS. (Response to letter 16.)

Response 7.

Presently the BLM does not have good access for development of public lands in the Yourname Creek drainage. Access across private land in the bottom appears to be a good, logical route for a road system; however, there appear to be other possible routes that could avoid private lands. Possible routes will be proposed, analyzed, and presented to the public before deciding on an acceptable road system for access to the drainage.
(Response to letter 16.)

Response 8.

The hunter use estimates on pages 265 and 269 of the draft RMP/EIS are a result of BLM observations and are thought to be accurate. Even were the figures off by 50 percent, the use is still low and would not effect proposed land use allocations. In addition, the allocations emphasize management practices that would not adversely impact recreation use. This situation has been analyzed in Chapter 4 of the draft RMP/EIS. (Response to letters 26, 39.)

Response 9.

The importance of wildlife habitat was recognized, along with other resource values, in developing the draft RMP/EIS (see the Summary statement, Chapter 2, objectives and guidelines for MAs 4, 5, 6 and 9 in appendix B and recommendations in Appendix D of this EIS). The preferred alternative places strong emphasis on wildlife habitat management. Under the preferred alternative 70 percent of the public lands will have stated wildlife habitat goals compared to the current 51 percent. Also, over 33,000 acres in the resource area will not be leased for livestock grazing mainly because these areas are important to wildlife. (Response to letters 26, 39.)

Response 10.

The Elk Logging Study guidelines are incorporated into the management area descriptions and are included in this EIS as Appendix D. In the preferred alternative, the WSAs are allocated to MAs 4, 5, and 9. These allocations will provide adequate escape cover for elk. Generally roads will be closed following management activities. (Response to letters 26, 39.)

Response 11.

The 200 miles of road to be constructed will be spread over 137,000 acres in the Garnet Resource Area during the next 20 years and will not totally occur in the WSAs. It is estimated in the plan that only 3,000 to 4,000 acres in the WSAs will be developed during the life of the plan, and the development will not occur until Congress releases them for multiple-use management. Likewise, the projected timber harvest was calculated for the entire public land base and not just for the WSAs. In the preferred alternative 6,600 acres of the Wales Creek and Hoodoo Mountain WSAs are allocated to special management (MA 9) and the remaining 16,360 acres are allocated to MAs 4, 5, and 6, all of which emphasize wildlife habitat. Roads generally will be closed following completion of planned management activities. (Response to letter 26.)

Response 12.

The Secretary of the Interior ruled on December 30, 1982 (published in 47 Federal Register 58372) that BLM lands of less than 5,000 acres, areas of split mineral estate, and areas being studied because they are contiguous to other agencies existing wilderness or WSAs would not be studied under the provisions of Section 603 of FLPMA.

If a field office chose to continue study of such areas, it could do so under the provisions of Section 202 of FLPMA which provided for study of an area for a variety of protective designations under the authority of the planning regulations (43 CFR 1601.6-1). Such areas found suitable for wilderness designation will be recommended to Congress in the same fashion as WSAs studied under Section 603 of FLPMA. Such areas found nonsuitable for wilderness designation would not be recommended to Congress. The final decision would be made in the Record of Decision for the RMP/EIS. A protest of such a decision should be made to the Montana State Director within 30 days of the issuance of the proposed RMP and final EIS. See the cover letter for further information. This Secretary of Interior decision is being challenged in the case of Sierra Club et al. versus Watt et al., January 13, 1983 (Civil 5-83-035 RAR). A ruling has been made on this case, but no interpretation has yet been given to the field offices. The final ruling does not affect interim management of the Garnet WSAs. (Response to letters 26, 39.)

Response 13.

The 520-acre Quigg West 202 WSA contains very valuable habitat for the flourishing bighorn sheep herd and is adjacent to the 60,000-acre Forest Service Quigg RARE II area. Over half the tract is commercial forest land, not talus slopes or scree. The upper Gallagher Creek 202 WSA contains 1,000 acres proposed for special management (MA 9) and lies adjacent to a 1,700-acre tract in the Cottonwood Meadow complex which is also proposed for special management. These acreages contain important wildlife habitat. These areas are addressed in Chapters 2, 3, 4, and Appendix O of the draft RMP/EIS. (Response to letter 26.)

Response 14.

Table E-5 in Appendix E of this EIS is a listing of areas the Forest Service was considering for study in its forest plans and was not intended to suggest that they will be recommended suitable for wilderness. At the time the draft document was being prepared the Forest Service was reevaluating all its roadless lands for wilderness suitability as required by several court decisions that found the RARE II documents were inadequate for some states. This table simply states the situation at the particular moment it was written and before the forest plans were released with their findings. Table E-3 in Appendix E of this EIS, is the actual listing of statutory wilderness areas in Montana. If Congress designates all the areas that currently have preliminary recommendations as suitable for wilderness, there would be 9,645,700 wilderness acres in Montana. This would be 35 percent of the federally owned land in Montana or 10 percent of the total land base of the state. These estimates do not include the Centennial Mountains, which are under study. See also Response A. (Response to letters 26, 39.)

Response 15.

Table E-4 in Appendix E of this EIS reflects administrative recommendations on wilderness currently pending before Congress.

Wilderness management has different objectives and is more restrictive in some ways than normal Park Service management. These lands are part of the whole wilderness equation and therefore will be retained in the tables. (Response to letters 26, 39.)

Response 16.

Wilderness supply and demand were addressed in Chapter 3, of this EIS. Demand is one of several factors evaluated in arriving at wilderness recommendations. (Response to letter 27.)

Response 17.

Ecotype diversity was one of several factors used to evaluate the wilderness suitability of the WSAs. Manageability, wilderness quality, economic conflicts, and need were also considered. These criteria are listed on page 9 and analyzed in Appendix O of the draft RMP/EIS. (Response to letter 27.)

Response 18.

The draft RMP/EIS discusses all significant environmental consequences that are reasonably foreseeable, including impacts occurring up to 20 years after implementation of the plan. The effects of resource development on wildlands in particular are discussed in Chapter 4 of this EIS. Also, the relationship between short-term uses and long-term productivity is summarized on page 160 of the draft RMP/EIS. (Response to letters 27, 29.)

Response 19.

The existence of considerable wilderness resources in the region was not considered in evaluating the wilderness quality of the four WSAs, but is of paramount importance in analyzing the need for additional wilderness resources in the region. The Garnet RMP/EIS is a planning document involving certain trade-offs. The existence of important wilderness resources in the region decreases the scarcity value of the four WSAs. This factor combined with manageability, resource conflict, and wilderness quality issues resulted in a weighing of the wilderness value of the three WSAs as less than other competing resource uses. (Response to letter 27.)

Response 20.

Roads are a management necessity in some areas. Through activity and project planning, existing and future road needs will be evaluated for type and time of access control as a factor in elk habitat management. The impacts of roads are analyzed in Chapter 4 of the draft RMP/EIS. The road between Hoodoo Mountain WSA and Wales Creek WSA is a county road and, therefore, is not under BLM control. (Response to letter 29.)

Response 21.

The draft RMP/EIS recommended three of the four WSAs as nonsuitable for wilderness designation after considering manageability, resource conflicts, need, and wilderness quality. Trade-offs of values and concerns, of which old-growth timber is one, also were considered in the recommendation. The ecotypes of those areas are well represented in the National Wilderness Preservation System (NWPS). (Six Douglas-fir, nine western spruce and fir, and five alpine meadow and barren ecotypes are presently represented in the NWPS. Also, 76 Douglas-fir, 109 western spruce and fir, and 5 alpine meadows and barren ecotypes are potential additions to the NWPS.) (Response to letter 35.)

Response 22.

Vehicle use on the roads associated with the Wales Creek WSA degrades solitude values in portions of the WSA. The existence of mineralization has been documented (USDI, GS 1984 and WGM Inc. 1983). These factors, along with others, lead to the non-wilderness recommendation. However, 4,900 acres in the Wales Creek drainage are allocated to MA 9 with wildlife habitat emphasis. The resource values are analyzed in Appendix O of the draft RMP/EIS. (Response to letter 35.)

Response 23.

Recreational benefits derived from road building were not a consideration in recommending Gallagher Creek 202 WSA as nonwilderness. Chapter 3 of this EIS states that existing roads are used by the public, and that new roads would be constructed for timber harvest under the Proposed Action. Those made available to the public would enhance snowmobile opportunities. Mannix Park cannot be studied for possible wilderness designation because the public lands are not contiguous due to the checkerboard ownership. The resource values are analyzed in Appendix O and summarized in Table O-7, Page 256 of the draft RMP/EIS. (Response to letter 35.)

Response 24.

FLPMA and the BLM's wilderness study policy (Federal Register, February 3, 1982) guided the preparation of the draft RMP/EIS. The draft RMP/EIS identified the values of the WSAs and the trade-offs inherent in a non-wilderness as well as a wilderness recommendation. It concluded that the wilderness values did not override other competing resource uses. Public comment, received from 1979 to 1981 regarding wilderness study area classifications, was nearly divided between those opposing wilderness study and those supporting such study. (Response to letter 35.)

Response 25.

mpacts relative to wilderness and non-wilderness designations were discussed in Chapter 4. Economic differences

among the alternatives were discussed under Impacts on Socioeconomic Conditions in Appendix o of the draft RMP/EIS. (Response to letter 36.)

Response 26.

The BLM wilderness inventory for the Garnet Resource Area, conducted in 1981, identified the road between Gallagher Creek and Hoodoo Mountain WSAs as a constructed and maintained road accessible by two-wheel drive vehicles. At present the road provides access to the upper portions of the Hoodoo Mountain and Gallagher Creek WSAs and is the only road crossing the top of the Hoodoo Mountain range. There is ample protection now for elk as the adjacent area is undeveloped and there are no immediate plans or needs to close the road. As development occurs in the surrounding area, the need for road closures, to provide elk security including closure of the subject road, will be evaluated. (Response to letter 39.)

Response A.

Appendix A of this EIS has been updated to reflect the data published in the Forest Service plans and the status of BLM wilderness studies. Also see Response 12. (Response to letters 26, 39.)

Response B.

The map in Chapter 3, page 88 of the draft RMP/EIS, is correct. WSA maps of Gallagher Creek on pages 30, 39, 237, and 268 incorrectly portray foot trails as vehicle ways. There are no roads in the Gallagher Creek 202 WSA. (Response to letters 26, 39.)

LIST OF PREPARERS

The following people participated in the preparation of the Garnet Resource Management Plan from which a substantial portion of this document was derived.

Project Manager

David R. Baker was responsible for the overall management of the interdisciplinary team and coordination of the document preparation process. His qualifications include experience as an interdisciplinary team member on the Dillon Resource Area and Jarbidge Resource Area Management Framework Plans, Assistant Area Manager (4 years) and Outdoor Recreation Planner (3 years) for the Garnet Resource Area, Realty Specialist (4 years) for the BLM, a BS in Forestry from the University of Montana, and graduate work in Outdoor Recreation Management at the University of Wyoming.

Technical Coordinator

Alexina M. McCullough assisted the project manager and provided technical guidance to the interdisciplinary team. Her qualifications include experience as a Realty Specialist (5 years) and Records Specialist (3 years) for the Garnet Resource Area, a BA from the University of Montana, and graduate work at Catholic University, Washington, D.C.

Interdisciplinary Team

Soils and Watershed

Vito A. Ciliberti, Jr. served as the team specialist on soils and hydrology. His qualifications include experience as a Soil Scientist and Hydrologist (6 years) for the Garnet Resource Area, Soil Scientist for the University of Montana (2 years), Process Engineer for water quality and process control (13 years), a BS from North Carolina State University, and a MS and PhD from the University of Montana.

Energy and Minerals

Melinda J. Mason served as the team specialist for minerals and geology. Her qualifications include experience as a Geologist (6 years) for the Garnet Resource Area and a BA in Geology from Stephens College, Columbia, Missouri.

Lands

Alexina M. McCullough served as the team specialist on surface ownership. (See the Technical Coordinator section for qualifications.)

Forest Management

Richard E. Betts served as the team specialist for forest management. His qualifications include experience as an interdisciplinary team member for the Colstrip EIS, Forester (8 years) for the Garnet Resource Area, Forester (15 years) for the former Missoula District of the BLM, Forester (7 years) for the Forest Management from Colorado A & M.

Range Management

Lawrence H. Newman served as the team specialist for range management. His qualifications include experience as a Range Conservationist (8 years) for the Garnet Resource Area, Natural Resource Specialist (10 years) for the former Missoula District of the BLM, and Forester (3 years) for the Forest Service, and a BS in Forestry (Range Option) from the University of Montana.

Historic and Cultural Management

John F. Taylor served as the team specialist for cultural and historic resources. His qualifications include experience as an interdisciplinary team member on the Headwaters RMP/EIS, and Archaeologist (8 years) with the BLM, Archaeologist/Historian (2 years) with the National Park Service, a BA in Anthropology from the University or Pennsylvania, and a MA in Anthropology from the University of Montana.

Recreation and Visual Resources

William C. Hollenbaugh served as the team specialist for recreation and visual resources. His qualifications are Recreation Planner with the Garnet Resource Area (4 years), Planning and Environmental Coordinator with the BLM (4 years), Recreation Planner with Missoula County (1 year), Associate Professor for Recreation and Land Use Planning with the University of Montana (3 years), Recreation Planner with the Bureau of Outdoor Recreation (7 years), Regional State Park Supervisor with the Pennsylvania Department of Forests and Water (4 years), a BS and MS from Pennsylvania State University, and advanced graduate studies in recreation management from the University of Michigan.

Wildlife

David W. McCleerey served as the team specialist for wildlife. His qualifications include experience as a Wildlife Management Biologist (9 years) for the Garnet Resource Area, Wildlife Management Biologist (3 years) for the BLM, Wildlife Technician (2 years) for the Forest Service, and a BS in Wildlife Biology from the University of Montana.

Social and Economic Conditions

David K. Nelson served as the team specialist for economic and social analysis. His qualifications include experience as an interdisciplinary team member on the Headwaters RMP/EIS, Economist (5 years) and Planner (1 year) with the BLM, and a BS in Economics and a MS in Agricultural Economics from Montana State University.

Wilderness

Philip A. Gezon served as the team specialist for wilderness. His qualifications include experience as an interdisciplinary team member for the Fuelco Missouri River Crossing EA, technical coordinator for Missouri Breaks Wilderness Suitability Report/EIS and the Bitter Creek Wilderness EIS, Outdoor Recreation Planner (7 years) with the BLM, a BA in History from Kenyon College, and a MS in Outdoor Recreation Management from the University of Oregon.

Document Production Team

This document was produced by the staff of the Butte District and Montana State Office. Table 5-2 lists the production team members and their function.

TABLE 5-2
DOCUMENT PRODUCTION TEAM

Function	*Name*
Planning Coordinator	Dan Lechefsky
Public Participation Coordinator	Millard Hulse
Editor	Carole Mackin
Production Manager	Mark Koski
Lead Word Processor	Delores Vavas
Document Production/Printing	State Office Printing & Graphics Staff

HEARINGS HELD BY THE BUREAU OF LAND MANAGEMENT ON THE

WILDERNESS RECOMMENDATIONS AND OTHER ASPECTS OF THE

GARNET DRAFT RESOURCE MANAGEMENT PLAN

AND ENVIRONMENTAL IMPACT STATEMENT

JAMES BINANDO
Hearing Officer
Montana State Office
Bureau of Land Management

Held at:

BUREAU OF LAND MANAGEMENT
Garnet Resource Area Office
3255 Fort Missoula Road
Missoula, Montana 59801

FEBRUARY 13, 1985

ANN STERNHAGEN
Professional Court Reporter
1400 Eleventh Avenue
Helena, Montana 59601

APPEARANCES

HEARING OFFICER:

James Binando, Director's Staff

PANEL MEMBERS:

Gerald Quinn, Associate District Manager
Dave Baker, Assistant Area Manager, Garnet
Resource Area

OTHER BLM OFFICIALS ATTENDING:

Gary Gerth, Program Manager
Dan Lechefsky, Planning Coordinator
James Beaver, Montana State Planning Coordinator

TESTIMONY FROM THE PUBLIC:

Arnold Stoverud
Mike Whitman
Bruce Lawrence

MR. BINANDO: This is the second of two public hearings scheduled for the Garnet Resource Area Management Plan and Environmental Impact Statement. The first was held at this same location at 3:00 p.m. today. I would like to begin the hearing at this time. The time for the record is 8:02 p.m.

I am Jim Binando, and I am on the State Director's staff of the Bureau of Land Management in Billings, Montana. I will be conducting this hearing. The Court Reporter is here to record the proceedings.

The Bureau of Land Management recently completed a Draft Resource Management Plan and Environmental Impact Statement for the Garnet Resource Area. The draft document was mailed to all known interested parties on December 14th, 1984. The Garnet RMP/EIS addresses future management options for approximately 145,660 surface acres and 213,385 acres of federal mineral estate and administered in Missoula, Granite, and Powell Counties by the BLM through its Garnet Resource Office.

When completed, the Garnet RMP will provide a comprehensive framework for managing and allocating public lands and resources in the Garnet Resource Area during the next ten or more years. The contents of this RMP/EIS document are primarily focused on resolving key resource management issues. These issues deal with renewable resources, nonrenewable resources, special attention resources, land ownership and administration, and cultural, visual and recreation resources.

This hearing is being held by the Bureau of Land Management for two complimentary and equally important purposes. First, this hearing has been arranged in compliance with Section 3(d)(1)(B) of the Wilderness Act of September 3rd, 1964, for the purpose of accepting testimony on the wilderness recommendations obtained in the Garnet Draft RMP/EIS. Second, this hearing is being conducted to allow testimony on all other aspects of the Garnet Plan and Environmental Impact Statement in accordance with regulations contained in 43 CFR 1610.2.

Testimony will be accepted relevant to the recommendations and analysis set forth in the Garnet Draft Resource Management Plan, and testimony which is related to this document only will be considered. To ensure that everyone has an opportunity to have their testimony heard, I ask that as nearly as possible your remarks be limited to the recommendations and analysis presented in the draft document. I would like to remind you at this time, if you have not already done so, to please register at the door and indicate whether you wish to present a written or oral statement.

All testimony received will be analyzed by the Garnet Planning Team, and the written record of that analysis as well as the transcripts of the hearing will be available for inspection here in the Garnet Resource Area Office and the Butte District Office. If you wish to purchase copies of the transcript of this hearing, please leave your name and address with the Court Reporter.

The analysis of the testimony received will be used to determine what changes, if any, will be required in the recommendations and analysis presented in the draft document. The analysis of the testimony will be incorporated into the final Garnet Resource Area Management Plan.

This is a formal hearing, and to ensure that all participants have an opportunity to express their views without interruption, there will be no debate, questions, or distractions during presentation of the testimony. Several BLM officials from the District and Area Office are present and will be glad to discuss issues with you informally following completion of this hearing.

The panel seated here to receive your comments consists of Gerald Quinn, Associate District Manager, seated nearest to me and Dave Baker who is the Assistant Area Manager for the Garnet Resource Area and is the Project Manager as well for the Garnet RMP/EIS. These gentlemen are here to listen to your statements and ask questions only to clear points in your testimony that they don't understand. They will not cross-examine. And I have instructed them that they are not to answer questions. This hearing is not a forum for BLM to explain its program, but rather an occasion for the public to state for the record its observations of the adequacy of BLM's work on the Plan/EIS thus far.

I will call the names of those wishing to make a statement in the order received. Those called will please come forward and begin by stating your name and whom you represent. If you have written text, please place a copy on the table upon completion of your statement. Those wishing to present written statements only may do so by bringing their text to the table following completion of the oral presentations.

Are there any questions on procedure?

If not, the listing does not show anyone desiring to testify. But I do have four letters that were handed me by individuals that did wish their comments be put on the record. And, I will read these and also indicate who submitted the documents.

Document number 3 from Tom R. Sewell, Montana Wilderness Association Council member. "I speak for my personal viewpoint as well as that of the Montana Wilderness Association. At least I assume I am still representing MWA officially.

We support alternative C, the maximum wilderness alternative, for the Garnet Management Plan.

The small areas proposed for wilderness should be so designated simply because they are the only areas suitable on the entire resource area. They are so small that there should be no opposition to their protection. The wildlife habitat may be managed by the BLM even if the areas become wilderness. The mineral potential of the areas are low.

The wales Creek, Hoo Doo, and Gallager areas must receive the protection only wilderness can give them."

MR. BINANDO: Ladies and gentlemen, the Garnet RMP/EIS hearing is reconvened. I see we have somebody wishing to testify. Would Mike Whitman please come forward.

Excerpts were taken from Mr. Whitman's statement that pertain to wilderness. Those excerpts are reported here: I'm not really absolutely sure what you are looking for as far as our ideas on it. We are more or less of a recreational organization that does an .....

We have nothing against anything as far as wilderness goes. Wilderness does have, in our opinion, a real — well, it has its place in the forest. But, we also don't want to get rid of the usable land and close off a lot of this that is usable as far as recreation goes to the motorized traveler, not just limiting him to four-wheel drives,

REPORTER'S CERTIFICATE

I, ANN STERNHAGEN, Professional Court Reporter, DO HEREBY CERTIFY that the foregoing twenty-one (21) pages of typewritten material constitute a full, true and correct transcript of my original shorthand notes, as they purport to contain, of the proceedings had and taken in the above-entitled cause at the time and place hereinbefore mentioned.

DATED this _____day of February, 1985.

_____

ANN STERNHAGEN
Court Reporter

APPENDIX A
PLANNING OVERVIEW AND CRITERIA

PLANNING OVERVIEW

The wilderness study areas were included in the Garnet Resource Management Plan (RMP). The RMP made coordinated land use allocations for all resources and established objectives and constraints for each resource and the activities that support it. Conflicts between resources were reconciled through analysis and discussion, including public comment. The RMP contains specific resource recommendations, decisions and trade-offs based on particular resource conditions and was completed in 1985. Comments from the public were sought for the RMP by public meetings held in 1981 and 1985 and by a written comment period from September 1985 through October 1985.

The RMP was written after completion of the wilderness inventory. This EIS, in conjunction with Congressional action, will serve to implement the RMP wilderness recommendations that require legislative action.

Bureau of Land Management Planning Regulations Manual Section 1601.8(b)(3) and 1601.6-3 detail RMP development. Regulations (43 CFR 1600) guide the process for resource management planning on public lands administered by the Bureau of Land Management. Subpart 1610.4 of 43 CFR identifies the steps in the RMP process:

Step 1. **Identification of Issues**
This step identifies resource management concerns, conflicts and opportunities that can be resolved through the planning process. This process is called "scoping" and involves public participation.

Step 2. **Development of Planning Criteria**
This step identifies the information needed to resolve issues, formulate and evaluate alternatives and select the preferred alternative. The criteria are circulated for public review.

Step 3. **Collection of Inventory Information**
This step collects the data needed to resolve resource issues and other environmental, social and economic concerns.

Step 4. **Analysis of the Management Situation**
This step assesses the current situation and provides a baseline for development of a resource management plan. A Management Situation Analysis (MSA) document is produced that describes the physical situation, current management guidance and resource problems and opportunities.

Step 5. **Formulation of Alternatives**
This step prepares several complete, reasonable resource management alternatives. A no action alternative describes present management while other alternatives place emphasis on environmental protection or resource production.

Step 6. **Analysis of Impacts of Alternatives**
This step analyzes the physical, biological, economic and social impacts of implementing each alternative.

Step 7. **Selection of the Preferred Alternative**
This step compares the impacts of each alternative and selects the preferred alternative. The interdisciplinary process used in Steps 5 through 7 is documented in a draft RMP/EIS and circulated for public review.

Step 8. **Selection of the Resource Management Plan**
This step analyzes public comments, modifies the alternatives as appropriate and serves as a basis for the District Manager to select a proposed resource management plan. The proposed RMP and final EIS is distributed to the public in the final RMP/EIS. A 30-day protest period is allowed before the resource management plan is adopted. A Record of Decision is published after consideration of any protests.

Step 9. **Monitoring and Evaluation**
This step monitors and evaluates the resource condition as the plan is implemented. If monitoring shows that resource issues are not being satisfactorily resolved or that the desired results outlined by the RMP are not being met, the plan may be amended or totally revised.

PLANNING CRITERIA AND QUALITY STANDARDS

Based on the issues identified both nationally and locally, planning criteria and quality standards were developed in the BLMs Wilderness Study Policy to direct the procedures for evaluation of suitability and nonsuitability of each WSA.

Planning Criteria

The planning criteria were used to evaluate wilderness values and manageability.

Evaluation of Wilderness Values. This criterion considered the extent to which each of the following components contributed to the overall values of an area for wilderness purposes:

Mandatory Wilderness Characteristics. This component considered the quality of the area's naturalness, size, and outstanding opportunities for solitude or primitive recreation.

Supplemental Values. This component considered the presence or absence and the quality of optional wilderness characteristics such as ecological, geological, or other features of scientific, educational, scenic, or historical value.

Multiple Resource Benefits. This component considered the benefits to other resources and uses that would be ensured by wilderness designation of the area.

Diversity in the National Wilderness Preservation System. This component considered the extent to which wilderness designation of the area under study would contribute to expanding the diversity of the National Wilderness Preservation System from the standpoint of each of the following factors:

Expanding the diversity of natural systems and features, as represented by ecosystems and landforms.

Expanding the opportunities for solitude or primitive recreation within a day's driving time (5 hours) of major population centers.

Balancing the geographic distribution of wilderness.

Manageability. This criterion evaluated if the area could be effectively managed to preserve its wilderness character.

Quality Standards

In addition to the planning criteria, a set of quality standards were developed to ensure consistency in evaluating the WSAs and 202 WSA.

Energy and Mineral Resource Values. This quality standard considered any identified or potential energy and mineral resource values.

Impacts on Other Resources. This quality standard considered the extent to which other resource values or uses of the area would be forgone or adversely affected as a result of this use.

Impact of Nondesignation on Wilderness Values. This quality standard considered the alternative use of the land under study if the area is not designated as wilderness, and the extent to which the wilderness values of the area would be forgone or adversely affected as a result of this use.

Public Comment. This quality standard considered comments received from interested and affected public at all levels.

Local, Social, and Economic Effects. This quality standard gave special attention to adverse or favorable social and economic effects that designation of the area would have on local areas.

Consistency with Other Plans. This quality standard considered consistency with officially approved and adopted resource related plans of other federal agencies, state and local governments, and Indian tribes.

APPENDIX B
MANAGEMENT AREA PRESCRIPTIONS

A total of 14 management areas have been identified for use in the Garnet RMP. Each management area consists of units of public land with similar resource potentials and limitations that are designated for management under a common set of management goals and guidelines. Management area boundaries do not always follow easily located topographic features or legal subdivisions. The boundaries are flexible to assure proper management of resources identified through additional on-the-ground reconnaissance and project planning. Each management area may occur in several places within the resource area. The maps displaying management areas for Alternatives A-E (in back map packet) must be used in conjunction with these descriptions.

Management area descriptions, goals, and guidelines for the Garnet Resource Area are defined in this appendix. The guidelines include numerous mitigative and resource coordination measures as required by NEPA and other laws, regulations, and policies.

MANAGEMENT AREA 1: RIPARIAN PROTECTION ZONE

Description

Management Area 1 includes lands dominated by riparian vegetation, adjacent to rivers, perennial and intermittent streams, lakes, ponds, bogs, marshes, seeps, and wet meadows with high values for wildlife and fish habitat, visual and recreational enjoyment, watershed and water quality protection, and livestock forage.

Management Goals

1. Manage riparian areas to maintain or enhance their value for wildlife, recreation, fishery, and aquatic habitat.

2. Provide some elements of old-growth or mature forest for wildlife habitat.

3. Provide opportunities to improve wildlife and fisheries habitat through specifically prescribed vegetative manipulation.

4. Maintain or enhance site productivity, water quality, and stream stability.

Management Guidelines

1. Livestock grazing generally will be permitted where use has been established. Grazing systems and management practices will be designed to maintain or improve riparian vegetation, aquatic habitat conditions, and streambank stability.

2. Oil and gas leases will be issued with standard stipulations and special stipulations as needed.

3. Locatable minerals will be regulated by 3809 Regulations. Mining activities will be guided by management goals.

4. Mineral material permits generally will not be issued.

5. Herbicides and insecticides will not be used.

6. Commercial forest land is set aside.

7. Noncommercial forest land is unavailable for woodlands product harvest.

8. Firewood collection will not be authorized. Exceptions may be permitted where compatible with management goals.

9. New roads will avoid riparian zones, except where required to cross streams or to provide access to meet management goals. Existing roads in the riparian zone will be reviewed for possible stabilization, closure, or relocation outside the riparian zone.

10. A variety of dispersed and water based recreation activities are permitted and may be supported by the development of river access, trails, and trailhead facilities. Cooperative river management programs for recreation will be encouraged with appropriate BLM participation on the Clark Fork River, Blackfoot River, and Rock Creek.

11. Motorized vehicle use will be restricted to open roads and trails. Exceptions may be permitted for snowmobile use.

12. The area will be managed to meet the visual quality objective of Visual Resource Management Class II or III from

the viewpoints identified on the visual sensitivity maps. Temporary departures from this visual quality objective may be acceptable when long-term visual values require such an action, or essential road access into other management areas is impossible without this temporary departure. Visual quality rehabilitation measures will be taken where the visual quality objective is not being met.

13. These lands generally will remain in public ownership. However, exceptions may be permitted where exchanges would result in acquisition of lands with greater public values.

14. These lands will be avoidance areas for utility corridors.

MANAGEMENT AREA 2: RIPARIAN MULTIPLE USE ZONE

Description

Management Area 2 includes lands dominated by riparian vegetation, adjacent to perennial and intermittent streams, ponds, bogs, marshes, seeps, springs, and wet meadows with value for wildlife and fish habitat, visual and recreational enjoyment, watershed and water quality protection, and livestock forage.

Management Goals

1. Manage riparian areas to maintain or enhance their value for wildlife, recreation, fishery, and aquatic habitat.

2. Under the principles of sustained yield, manage suitable and available commercial forest land with operational restrictions that maintain or improve riparian zone values.

3. Provide elements of old-growth or mature timber for wildlife habitat.

4. Maintain or enhance site productivity, water quality, and stream stability.

Management Guidelines

1. Livestock grazing generally will be permitted. Grazing systems and management practices will be designed to maintain or improve riparian vegetation, aquatic habitat conditions, and streambank stability.

2. Oil and gas leases will be issued with standard stipulations and special stipulations as needed.

3. Locatable minerals will be regulated by 3809 Regulations. Mining activities will be guided by management goals.

4. Mineral material permits generally will not be issued.

5. Herbicides and insecticides will not be used.

6. The width of the riparian influence zone will be determined on a site-specific basis for project plans. For general land management planning the management area will be considered as 75 feet on either side of designated stream channels or other aquatic features.

7. Timber management activities will be designed to maintain or improve riparian zone values.

8. Noncommercial forest land is available for wood product harvest. Generally, harvest will only occur when scheduled timber sales on adjacent commercial forest land provide an opportunity for sanitation or salvage, or when multiple use management goals require silvicultural treatment or habitat improvement to obtain desired stand structure and composition.

9. Firewood collection may be authorized. Closures may be implemented where needed to achieve management goals.

10. Machine scarification will not be used on slopes over 40 percent or in the riparian buffer zones designated in Table B-1.

TABLE B-1
RIPARIAN BUFFER ZONE

Land Slope	*Buffer Zone*
10%	75 feet
20%	130 feet
30%	170 feet
40%	210 feet

11. No wheel or crawler vehicles will operate within 75 feet of perennial and intermittent streams, except as required for road construction at stream crossings. Timber harvest and site preparation will maintain a minimum 75 feet wide strip of

vegetation along stream channels to filter sediment and organic debris from disturbed areas.

12. New road locations will avoid the riparian zones, except where required to cross streams or to provide access to meet management goals. Road location and design adjacent to seeps, bogs, marshes, and wet meadows should avoid diverting flow of water from riparian features below roads or draining riparian features above roads.

13. A variety of dispersed and water based recreation activities are permitted and may be supported by the development of access trails and trailheads.

14. Motorized vehicle use will be restricted to open roads and trails. Exceptions may be permitted for snowmobile use.

15. The area will be managed to meet the visual quality objective of Visual Resource Management Class II or III from the viewpoints identified on the visual sensitivity maps. Temporary departures from this visual quality objective may be acceptable when long-term visual values require such an action, or essential road access into other management areas is impossible without this temporary departure. Visual quality rehabilitation measures will be taken where the visual objective is not being met.

16. These lands may be available for exchange or sale. All proposals will be evaluated.

17. These lands may be available for consideration as utility corridor if compatible with management goals.

MANAGEMENT AREA 3: GENERAL FOREST MANAGEMENT

Description

Management Area 3 consists of commercial forest lands of varying physical environments classified as suitable for timber management through Timber Production Capability Classification (see Appendix C).

Management Goals

1. Under the principles of sustained yield, manage suitable and available commercial forest land to realize timber growing potential.

2. Maintain site productivity, water quality, and stream stability.

3. Provide for dispersed recreation opportunities, wildlife habitat, and livestock use within the constraints of 1 and 2 above.

4. Provide elements of old-growth wildlife habitat in the immediate vicinity of important big game summer and fall habitat features such as wallows, licks, security areas, etc.

Management Guidelines

1. Livestock grazing generally will be permitted. Fencing, herding, manipulation of salt and water, or adjustments in the pasture rotation schedule will be used to protect regeneration in plantations. The number of Animal Unit Months authorized may be increased, reduced, or relocated in response to vegetative changes.

2. Oil and gas leases will be issued with standard stipulations.

3. Generally, these lands are available for mineral exploration and production. Locatable minerals will be regulated by the 3809 Regulations. Mining activities will be guided by management goals.

4. Project plans will incorporate considerations for elk summer habitat, deer and elk winter ranges, riparian habitat, and nongame wildlife habitat management where these values are present or potentially present.

5. Specific big game features such as wallows, mineral licks, and important forage and resting sites associated with mesic areas will be protected with a buffer strip in which sanitation and salvage or selection harvest maintaining a minimum 70 percent of existing or normal tree canopy is permitted. For planning purposes, the width of the buffer strip will be mapped as 200 feet from the perimeter of the feature or complex of features. For project activity, the buffer strip width may vary, depending on the effectiveness of vegetative and topographic screens, but will not exceed 300 feet. Cutting unit boundaries will be adjusted so that the feature is contiguous to forested security cover. Skidding equipment should not be permitted within 100 feet of the feature and logging debris should be removed from all trails leading to the feature.

6. Riparian areas not designated Management Area 1 or Management Area 2 will be recognized in activity plans, and Best Management Practices for the protection of water quality and riparian features will be applied. The width of the riparian influence zone will be determined on a site-specific basis.

7. Timber harvest systems will include varying proportions of clearcut, seed tree, shelterwood, and selection depending on stand and site productivity and silvicultural objectives.

8. Timber harvest and slash treatment practices will be designed to provide opportunities for public firewood collection.

9. Machine scarification will not be used on slopes over 40 percent or in the riparian buffer zones designated in Table B-2.

TABLE B-2
RIPRIAN BUFFER ZONES FOR TOLERANT AND SENSITIVE SOILS

Land Slope	*For General Situation*	*Buffer Zone for Sensitive Soils*
10%	45 feet	75 feet
20%	65 feet	130 feet
30%	85 feet	170 feet
40%	105 feet	210 feet

10. No wheel or crawler vehicles will operate within 45 feet of perennial and intermittent streams, except as required for road construction at stream crossings. Timber harvest and site preparation will maintain a minimum 45-foot wide strip of vegetation along stream channels to filter sediment and organic debris from disturbed areas.

11. Timber harvest will be designed to prevent an increase in runoff that is likely to result in stream channel degradation.

12. A variety of dispersed recreation activities are permitted and may be supported by construction of trails and trailheads.

13. Motorized vehicle use will be restricted to open roads and trails. Exceptions may be permitted for snowmobile use.

14. Seasonal or yearlong road closures will be permitted to achieve management goals for Management Area 3 or for adjacent management areas.

15. Management practices will follow guidelines for Visual Resource Management Class III or IV.

16. These lands may be available for exchange or sale depending upon their size and location. All proposals will be evaluated.

17. These lands may be available for consideration as utility corridors if compatible with management goals.

MANAGEMENT AREA 4: ELK SUMMER AND FALL HABITAT COMPONENTS

Description

Management Area 4 includes high density mappable portions of the resource area's elk summer and fall habitat components. It includes commercial forest, noncommercial forest, and nonforest lands containing components such as wallows, mineral licks, travel corridors, forage, and security areas in close proximity so that they tend to concentrate big game animals in a relatively small area. Although emphasis is on elk, other big game species will receive management consideration.

Management Goals

1. Maintain or improve elk summer and fall habitat components through specifically prescribed vegetative manipulation.

2. Provide elements of old-growth or mature timber for wildlife habitat in the immediate vicinity of elk summer and fall habitat components.

3. Manage riparian areas to maintain or enhance their value for wildlife, fisheries, aquatic habitat, recreation, watershed protection, and water quality.

4. Under the principles of sustained yield, manage suitable and available commercial forest land with operational restrictions that consider long-term requirements for elk summer and fall habitat components, including habitat conditions on adjoining lands.

5. Maintain site productivity, water quality, and stream stability.

Management Guidelines

1. Livestock grazing generally will be permitted and will be regulated to maintain or improve elk summer and fall habitat components.

2. Oil and gas leases will be issued with standard stipulations and special stipulations as needed.

3. Locatable minerals will be regulated by 3809 Regulations. Mining activity will be guided by management goals.

4. Riparian areas not designated Management Area 1 or Management Area 2 will be recognized in activity plans, and Best Management Practices for the protection of water quality and riparian features will be applied. The width of the riparian influence zone will be determined on a site-specific basis.

5. Timber management activities will be designed to maintain or improve elk summer and fall habitat components.

6. Noncommercial forest land may be considered for woodlands product harvest only when scheduled timber sales on adjacent commercial forest land provide an opportunity for sanitation or salvage, or when multiple use management goals require silvicultural treatment or habitat improvement to obtain desired stand structure and composition.

7. Firewood collection will be provided in timber sale areas, only when compatible with management goals.

8. Road location will avoid elk habitat components including wallows, licks, high use forage areas, and saddles used as travel routes wherever possible. Road right-of-way slash will be disposed of in such a way that it does not pose a travel barrier. Road right-ofway clearing will be kept to a minimum.

9. Duration of timber sale activity will be limited to as short a period as possible. Timber should be harvested, slash treated, and roads closed within two summer seasons. Additional timber sales will not be scheduled in or adjacent to Management Area 4 cutting units for five years following closure of a timber sale in the unit unless required to salvage mortality.

10. Security areas will be maintained adjacent to units where timber sales are scheduled as described in 2Montana Cooperative Elk Logging Study1 (USDA, FS 1982a) management recommendations (see Appendix S). Security areas should consist of adjacent drainages with acceptable cover quality in which no disturbance or timber sale activity is scheduled.

11. Harvest and thinning units will be 20 acres or less with irregular shapes or reserve blocks within units to increase edge effect and maintain proper sight distances. Reserve areas between treatment units will be a minimum of 600 feet wide. Timber harvest adjacent to past cutting units will be deferred until regeneration provides security cover with a minimum of 200 trees per acre eight feet high.

12. Slash disposal in cutting units will reduce average slash depths to less than 1.5 feet to reduce interference with forage use and travel.

13. Timber harvest will include varying proportions of shelterwood, seed tree, clearcuts, and selection methods.

14. Habitat components such as wallows, mineral licks, and forage and resting sites associated with mesic areas will be protected with a buffer strip in which sanitation and salvage or selection harvest maintaining a minimum 70 percent of existing or normal tree canopy is permitted. For planning purposes, the width of the buffer strip will be 200 feet from the perimeter of the feature or complex of features. For project activity, the buffered area (location) will be determined on the ground to take advantage of screening topography and vegetation, but not to exceed 300 feet width from the perimeter of the feature or complex of features. Cutting unit boundaries will be adjusted so that the feature is contiguous to forested security cover. Skidding equipment should not be permitted within 100 feet of the feature and logging debris should be removed from all trails leading to the feature.

15. Timber harvest will be designed to maintain or develop security cover adjacent to natural forage areas. Shelterwood or selection systems will generally be favored adjacent to one to five-acre parks, meadows, and grasslands; and intermediate treatments (thinnings) will be designed to maintain security cover. For parks, meadows, and grasslands over five acres, timber harvest units may remove cover from up to 25 percent of the park perimeter. The remainder of the perimeter will be maintained in existing cover until harvested portions return to security cover. Security cover on the upslope portions of parks is especially critical.

16. The resource area wildlife and forestry staff will review prescriptions, unit layout, and marking guides for effectiveness in providing security cover throughout the rotation.

17. Timber harvest along designated ridge tops, saddles, and draws used as travel routes by big game will be designed to maintain hiding or thermal cover 600 feet wide using predominantly shelterwood or selection systems along travel routes. Wherever possible cover should be continuous and not disruped by clearcut or seed tree units or roads.

18. Machine scarification will not be used in slopes over 40 percent or in the riparian buffer zones designated in Table A-2.

19. No wheel or crawler vehicles will operate within 45 feet of perennial and intermittent streams, except as required for road construction at stream crossings. Timber harvest will maintain a minimum 45-foot wide strip of undisturbed vegetation along stream channels to filter sediment and organic debris from disturbed areas.

20. Timber harvest will be designed to prevent an increase in runoff that is likely to result in stream channel degradation.

21. A variety of dispersed recreation activities are permitted and may be supported by existing trails and trailheads. New trail construction or relocation of existing trails will avoid this management area. Campgrounds and other recreation developments will not be constructed.

22. Motorized vehicle use will be restricted to open roads and trails. Exceptions may be permitted for snowmobile use.

23. Existing mainline and spur roads will be closed seasonally or yearlong to motorized vehicle travel, except where checkerboard ownership patterns prevent unilateral closure of roads. In these cases, BLM will aggressively pursue the establishment of seasonal or yearlong cooperative road closures. Any new roads will also be closed seasonally or yearlong.

24. Management practices will follow the guidelines or Visual Resource Management Class III or IV.

25. These lands generally will remain in public ownership. However, exceptions may be permitted where exchanges would result in acquisition of lands with greater public values.

26. These lands will be avoidance areas for utility corridors.

MANAGEMENT AREA 5: BIG GAME SUMMER AND FALL RANGE

Description

Management Area 5 consists of commercial forest, noncommercial forest, and nonforest lands which are summer and fall ranges for big game, with emphasis on elk. This management area is applied where public lands are important elk summer and fall habitat.

Management Goals

1. Provide a beneficial arrangement of forage and cover for big game summer and fall range through timber management activities.

2. Under the principles of sustained yield, manage suitable and available commercial forest land with operational restrictions that consider the long-term requirements of big game summer and fall habitat, including habitat conditions on adjoining lands.

3. Provide for dispersed recreation opportunities, nongame wildlife habitat, and livestock use.

4. Maintain site productivity, water quality, and stream stability.

5. Provide elements of old-growth or mature forest for wildlife habitat in the immediate vicinity of big game summer habitat components.

Management Guidelines

1. Livestock grazing will generally be permitted and will be regulated to maintain summer range values.

2. Oil and gas leases will be issued with standard stipulations and special stipulations as needed.

3. Lands are generally available for locatable minerals and will be regulated by the 3809 Regulations. Mining activities will be guided by management goals.

4. Riparian areas not designated Management Area 1 or Management Area 2 will be recognized in activity plans, and Best Management Practices for the protection of water quality

and riparian features will be applied. The width of the riparian influence zone will be determined on a site-specific basis.

5. Timber management activities will be designed to maintain or improve big game summer and fall habitat.

6. Noncommercial forest land may be considered for wood product harvest only when scheduled timber sales on adjacent commercial forest land provide an opportunity for sanitation or salvage, or when multiple use management goals require silvicultural treatment or habitat improvement to obtain desired stand structure and composition.

7. Firewood collection opportunities will be authorized in timber sale areas. Authorizations may be restricted as needed to achieve management goals.

8. Duration of timber sale activity will be limited to as short a period as possible. Timber should be harvested, slash treated, and roads closed within a maximum of three summer seasons.

9. Big game habitat components such as wallows, mineral licks, and foraging or resting sites will be protected with a buffer strip in which sanitation and salvage or selection harvest maintaining a minimum 70 percent of existing or normal tree canopy is permitted. For planning purposes the width of the buffer strip will be mapped as 200 feet from the perimeter of the components. For project activity, the buffer strip width may vary, depending on the effectiveness of vegetative and topographic screens, but will not exceed 300 feet. Cutting unit boundaries will be adjusted so that the component is contiguous to forested security cover. Skidding equipment should not be permitted within 100 feet of the component, and logging debris should be removed from all trails leading to the component.

10. Timber harvest will be designed to maintain or develop security cover adjacent to natural big game forage areas. Shelterwood or selection systems will generally be favored adjacent to one to five-acre parks, meadows, and grasslands; and intermediate treatments (thinnings) will be designed to maintain security cover. For parks, meadows, and grasslands over 5 acres timber harvest will remove cover from no more than 40 percent of the park perimeter. The remainder of the perimeter will be maintained in existing cover until harvested portions return to security cover. Security cover on the upslope portions of parks is especially critical. The resource area wildlife and forestry staff will review prescriptions, cutting unit layout, and marking guides for effectiveness in providing security cover throughout the rotation.

Security areas will be maintained adjacent to units where timber sales are scheduled as described in 2Montana Cooperative Elk Logging Study1 (USDA, FS 1982a) management recommendations. Security areas should consist of adjacent drainages with acceptable cover quality in which no disturbance or timber sale activity is scheduled.

11. Slash disposal in cutting units will reduce average slash depths to less than 1.5 feet to reduce interference with big game forage use and travel.

12. Timber harvest will include varying proportions of clearcut, seed tree, and shelterwood systems, depending on stand and site conditions and silvicultural objectives.

13. In order to optimize cover effectiveness harvest and thinning units will generally be irregular in shape at 20 to 40 acres. Reserve areas between treatment units will be a minimum of 600 feet wide. Timber harvest adjacent to past harvest units will be deferred until regeneration on harvest units constitute security cover with a minimum of 200 trees per acre eight feet high.

14. Timber harvest along designated ridge tops, saddles, and draws used as travel routes by big game will be designed to maintain hiding or thermal cover 600 feet wide using predominantly shelterwood systems along travel routes. Wherever possible cover should be continuous and not disrupted by clearcut or seed tree units or roads.

15. Machine scarification will not be used on slopes over 40 percent or in the riparian buffer zones designated in Table A-2.

16. No wheel or crawler vehicles will operate within 45 feet of perennial and intermittent streams, except as required for road construction at stream crossings. Timber harvest will maintain a minimum 45-foot wide strip of undisturbed vegetation along stream channels to filter sediment and organic debris from disturbed areas. Timber harvest will be designed to prevent an increase in runoff that is likely to result in stream channel degradation.

17. Road location will avoid habitat components including wallows, licks, high use forage areas, and saddles used as big game travel routes wherever possible. Road right-of-way slash will be disposed of in such a way that it does not pose a barrier to big game travel. Road right-of-way clearing will be kept to the minimum required. Roads will be located and designed to reduce barriers to big game travel.

18. A variety of dispersed recreation activities are permitted and may be supported by construction of trails and trailheads. Campgrounds and other recreation developments will not be constructed.

19. Motorized vehicle use will be restricted to open roads and trails. Exceptions may be permitted for winter snowmobile use.

20. Generally roads will be closed seasonally or yearlong to motorized vehicle travel, except where checkerboard ownership patterns prevent unilateral closure of roads. In these cases, BLM will aggressively pursue the establishment of seasonal or yearlong cooperative road closures.

21. Management practices will follow the guidelines for Visual Resource Management Class III or IV.

22. Generally, these lands will remain in public ownership.

23. These lands may be available for consideration as utility corridors if compatible with management goals.

MANAGEMENT AREA 6: BIG GAME WINTER RANGE

Description

Management Area 6 consists of commercial forest, noncommercial forest, and nonforest lands which are winter ranges for deer, elk, or bighorn sheep. These lands will be managed to attain a balance of winter cover and forage for big game through timber management activities.

Management Goals

1. Enhance forage production and cover for deer, elk, or bighorn sheep on winter range.

2. Under the principles of sustained yield, manage uitable and available commercial forest land with operational restrictions for the maintenance or improvement of big game winter range.

3. Maintain site productivity, water quality, and stream stability.

4. Provide for dispersed recreation opportunities, nongame wildlife habitat, and livestock use.

Management Guidelines

1. Livestock grazing generally will be permitted and regulated to maintain sufficient forage to meet big game needs.

2. Oil and gas leases will be issued with standard stipulations and special stipulations as needed.

3. Locatable minerals will be regulated by 3809 Regulations. Mining activities will be guided by management goals.

4. Riparian areas not designated Management Area 1 or Management Area 2 will be recognized in activity plans; and Best Management Practices for the protection of water quality and riparian features will be applied. The width of the riparian influence zone will be determined on a site-specific basis.

5. Timber management activities will be designed to maintain or improve big game winter range.

6. Noncommercial forest land may be considered for woodlands product harvest only when scheduled timber sales on adjacent commercial forest land provide an opportunity for sanitation or salvage, or when multiple use management goals require silvicultural treatment or habitat improvement to obtain desired stand structure and composition.

7. Firewood collection opportunities will be authorized in timber sale areas. Authorization may be restricted as needed to achieve management goals.

8. Timber sale contracts will prohibit most sale activity during the winter and spring seasons to prevent disturbance of animals on winter range. Where winter logging is desirable, the activity must be compatible with big game winter habitat requirements.

9. Timber harvest will be designed to prevent runoff increases likely to result in stream channel degradation.

10. Duration of timber sale activity should be limited to as short a period as possible. Timber will be harvested, slash treated, and roads closed within two summer seasons in timber sale units.

11. Machine scarification will not be used on slopes over 40 percent or in the riparian buffer zones designated in Table A-2.

12. No wheel or crawler vehicles will operate within 45 feet of perennial and intermittent streams, except as required for road construction at stream crossings. Timber harvest will maintain a minimum 45-foot wide strip of undisturbed vegetation along stream channels to filter sediment and organic debris from disturbed areas.

13. Timber sale units and thermal or security cover areas will generally be 20 to 30 acres in size. Unit shapes will be irregular with reserve blocks within harvest units where necessary to increase edge effect and maintain proper sight distances. Reserve areas between harvest units will be as wide as the harvest units or a minimum of 600 feet wide. Timber harvest adjacent to past harvest units will be deferred until harvest units constitute security cover with a minimum of 200 trees per acre 8 feet high.

14. Cover areas will be managed to maximize thermal cover (70+ percent forest canopy cover, minimum 40 feet dominant canopy height, preferably twostoried) with the remainder in security cover. Thermal cover should be provided on both low and high energy aspects adjacent to forage areas.

15. Timber harvest will be designed to maintain or develop thermal cover adjacent to natural big game forage areas. Shelterwood or selection systems will generally be favored adjacent to one to five-acre parks, meadows, and grasslands and intermediate treatments (thinnings) will be designed to develop or maintain thermal cover. For parks, meadows, and grasslands over 5 acres, timber harvest may remove cover from up to 25 percent of the park perimeter. The remainder of the perimeter will be maintained in existing cover until harvested portions return to thermal cover. The resource area wildlife and forestry staff will review prescriptions, unit layout, and marking guides for effectiveness in providing thermal cover throughout the rotation.

16. Silvicultural systems will include varying proportions of clearcut, seed tree, shelterwood, group selection, and single tree selection methods.

17. Road right-of-way slash will be disposed of in such a way that it does not pose a barrier to big game travel. Slash disposal in cutting units will reduce average slash depths to less than 1.5 feet to reduce interference with big game forage use and travel.

18. A variety of dispersed summer and fall recreation activities are permitted and may be supported by construction of trails and trailheads. Winter recreation activity will be permitted where it does not conflict with wintering big game.

19. Motorized vehicle use will be restricted to open roads and trails unless closed under the terms of Guideline 18.

20. Generally, roads will be evaluated for seasonal or yearlong closure to motorized vehicle travel, except where checkerboard ownership patterns prevent unilateral closure of roads. In these cases, BLM may aggressively pursue the establishment of seasonal and yearlong cooperative road closures.

21. Management practices will follow the guidelines for Visual Resource Management Class III or IV, except in visually sensitive corridors identified in the Resource Management Plan.

22. These lands generally will remain in public ownership. However, exceptions may be permitted where exchanges would result in acquisition of lands with greater public values.

23. Available for consideration as utility corridor if compatible with management goals.

MANAGEMENT AREA 7: NONCOMMERCIAL FOREST AND TPCC WITHDRAWN COMMERCIAL FOREST

Description

Management Area 7 includes noncommercial forest land as well as commercial forest land withdrawn from the timber production base as a result of Timber Production Capability Classification (see Appendix C). These areas may include cliffs, caves, rock outcrops, talus, and old-growth timber.

Management Goals

1. Maintain site productivity, water quality, and stream stability.

2. Provide for the harvest of wood products from noncommercial forest and timber production capability classification withdrawn commercial forest while maintaining or enhancing other woodland resource values.

3. Maintain old-growth, mature forest, and unique features for wildlife habitat.

4. Provide opportunities for a variety of dispersed recreation activities.

Management Guidelines

1. Livestock grazing will generally be permitted and may be regulated.

2. Oil and gas leases will be issued with standard stipulations and special stipulations as needed.

3. Lands are generally available for locatable minerals and will be regulated by the 3809 Regulations. Mining activities will be guided by management goals.

4. Management practices to maintain or improve wildlife habitat will be permitted.

5. Riparian areas not designated Management Area 1 or Management Area 2 will be recognized in activity plans and will be given consideration for the protection of water quality and riparian features. The width of the riparian influence zone will be determined on a site-specific basis.

6. Noncommercial forest land may be considered for wood product harvest only when scheduled timber sales on adjacent commercial forest land provide an opportunity for sanitation or salvage, or when multiple use management goals require silvicultural treatment or habitat improvement to obtain desired stand structure and composition.

7. Firewood collection opportunities may be available, but will be limited by the absence of scheduled timber sales.

8. Construction of roads to access other management areas will be avoided if possible. Road construction in riparian zones will be avoided except where required to cross streams.

9. A variety of dispersed recreation activities are permitted and may be supported by construction of trails and trailheads.

10. Motorized vehicle use will be restricted to open roads and trails. Exceptions may be permitted for snowmobile use.

11. Seasonal or yearlong road closures will be permitted to achieve management goals for Management Area 7 or for adjacent management areas.

12. This area will be managed to meet the visual quality objective of Visual Resource Management Class II or III. Temporary departures from this visual quality objective may be acceptable when long-term visual values require such an action or essential road access into other management areas is impossible without this temporary departure. Visual quality rehabilitation measures will be taken where the visual quality objective is not being met.

13. These lands may be available for exchange or sale. All proposals will be evaluated.

14. These lands may be available for consideration as utility corridors if compatible with management goals.

MANAGEMENT AREA 8: AREAS RECOMMENDED FOR WILDERNESS DESIGNATION

Description

Management Area 8 consists of portions of the resource area that are being recommended for wilderness designation. Each such area has been evaluated or studied under either Section 202 or 603 of the Federal Land Policy and Management Act. Wilderness recommendations are based upon the wilderness review of the Wilderness Study Areas (WSAs) listed in Table B-3.

All WSAs currently are subject to the BLM's Interim Management Policy (IMP) and Guidelines for Lands under Wilderness Review. Upon completion of this RMP, the 202 WSAs that are not recommended for wilderness classification will be released from the IMP constraints. All other WSAs will be subject to the IMP until Congress reviews the agency's recommendations. If any or all of these WSAs are not recommended suitable for wilderness, the area will be managed under the direction of one or more of the other management area prescriptions. These are identified in the map packet which accompanies this document.

TABLE B-3
WILDERNESS STUDY AREAS

Number	*Name*	*Size*	*Study Authority*
MT074-150	Wales Creek WSA	11,580 acres	(Section 603)
MT074-151A	Hoodoo Mountain WSA	11,380 acres	(Section 603)
MT074-151B	Gallagher Creek 202 WSA	4,257 acres	(Section 202)
MT074-155	Quigg West 202 WSA	520 acres	(Section 202)

Management Goals

Manage in accordance with the Wilderness Act of 1964 and USDI BLM Wilderness Management Policy. These include the following basic concepts: preserve wilderness character in an unimpaired condition, provide opportunities for public use and enjoyment, and allow nonconforming but accepted uses in a manner that will prevent unnecessary or undue degradation of wilderness character.

Management Guidelines

1. Following wilderness classification by Congress, a wilderness management plan will be written for each area and incorporated into the Garnet Resource Management Plan.

2. Livestock grazing, where already established, will be permitted to continue subject to the BLM wilderness management policy and grazing regulations (43 CFR 4100). Grazing systems and management practices will conform to BLM wilderness management policy.

3. Issuance of new oil and gas leases will be prohibited.

4. Subject to valid rights existing on December 31, 1983, mining will be prohibited and the area withdrawn from all forms of appropriation under the mining laws. Mining operations permitted because of valid existing rights must be based upon an approved plan of operations and will be regulated under 43 CFR 3802 and the BLM Wilderness Management Policy.

5. Mineral material permits will not be issued.

6. Herbicides and insecticides generally will not be used.

7. Fire management and control actions will be consistent with the BLM Wilderness Management Policy.

8. Commercial forest land is unavailable for timber production and is withdrawn from the sustained yield timber production base.

9. Noncommercial forest land is unavailable for wood product harvest.

10. Firewood collection is prohibited unless for incidental use associated with camping.

11. Visitor use will be managed to a level compatible with the wilderness resource to prevent loss of solitude or unacceptable depreciation of the wilderness qualities.

12. Trail construction may be permitted and will be accomplished with minimal disturbance of the natural environment.

13. Facilities and structures may be constructed to insure the protection of the wilderness values; however, facilities may not be constructed to provide convenience to recreationists.

14. Off-road vehicle use will not be permitted.

15. Management practices will follow the guidelines for the preservation of Visual Resource Management Class I, except for modifications caused by the operation of natural processes.

16. These lands will remain in public ownership.

17. These lands are unavailable for utility corridor development or facility siting.

MANAGEMENT AREA 9: SPECIAL MANAGEMENT AREAS

Description

Management Area 9 consists of land distinguished by special, unique, or natural characteristics which require some form of special management and include Areas of Critical Environmental Concern.

Management Goals

1. Goals for each area will depend on the special and unique features or values within that particular area.

2. Ultimate disposition for each area will maintain, enhance, or restore site productivity, water quality, and stream stability.

Management Guidelines

1. Livestock grazing generally will be permitted to continue where already established.

2. Oil and gas leases will be issued with standard stipulations and special stipulations as needed.

3. Locatable minerals will be regulated by 3809 Regulations. Mining activities will be guided by management goals.

4. Components of this management area may be evaluated for withdrawal from mineral entry.

5. Mineral material permits are not allowed where inconsistent with management goals.

6. Wildlife and fish habitat improvement projects may be permitted if consistent with management goals.

7. Commercial forest land is set aside.

8. Firewood collection will not be authorized unless consistent with management goals.

9. Roads will not be constructed for surface land management purposes unless needed to meet specific management goals. Roads will be permitted for mineral activities where construction is justified on the basis of mineral showings or data and where it is the next logical step in development of the mineral resource.

10. Developed recreation facilities, including campgrounds or picnic grounds, will not be constructed unless consistent with the primary goals of the area.

11. Trails and trailheads may be constructed or improved to increase accessibility, enhance dispersed recreation, and protect other resource values, if consistent with the goals of each special management area.

12. This area will generally be closed to motorized vehicle use. Exceptions may be permitted for snowmobile use.

13. Road closures may be possible, depending upon management objectives.

14. Management practices will follow guidelines for applicable Visual Resource Management Class.

15. Generally, these lands will remain in public ownership.

16. These lands will be avoidance areas for utility corridors.

MANAGEMENT AREA 10: DEVELOPED AND UNDEVELOPED RECREATION SITES

Description

Management Area 10 consists of existing and potential recreation use areas located throughout the resource area with developed, minimal, or no developed facilities to support a wide range of recreation activities.

Management Goals

1. Maintain and enhance the present variety and quality of recreation sites to contribute to public enjoyment of the resource area.

2. Under the principles of sustained yield, manage suitable and available commercial forest land with operational restrictions to maintain or improve recreational opportunities and scenic quality.

3. Maintain site productivity, water quality, and stream stability.

Management Guidelines

1. Livestock grazing generally will be permitted. However there may be areas where grazing will not be permitted in order to meet management goals.

2. Oil and gas leases will be issued with standard stipulations and special stipulations as needed.

3. Generally, these lands are available for mineral location. Locatable minerals will be regulated by the 3809 Regulations. Mining activities will be guided by management goals.

4. Mineral material permits will generally not be issued.

5. Fire will not be used as a management tool in developed recreation sites.

6. Riparian areas not designated Management Area 1 or Management Area 2 will be recognized in activity plans, and Best Management Practices for the protection of water quality and riparian features will be applied. The width of the riparian influence zone will be determined on a site-specific basis.

7. Timber management activities will be designed to maintain or improve recreation opportunities and scenic quality.

8. Noncommercial forest land is available for wood product harvest on an unregulated basis. Generally, harvest will only occur when scheduled timber sales on adjacent commercial forest land provide an opportunity for sanitation or salvage, or when recreation and visual management goals require silvicultural treatment to obtain desired stand structure and composition.

9. Firewood collection will not be authorized unless compatible with management goals.

10. Complete disposal of thinning or timber harvest slash will be required to maintain scenic quality and recreation opportunities.

11. Roads may be constructed as necessary to meet management goals.

12. Recreation developments may be permitted.

13. Management practices will follow guidelines for Visual Resource Management Class II or III.

14. Motorized vehicle use is restricted to open roads and trails. Exceptions may be permitted for snowmobile use.

15. These lands generally will remain in public ownership. However, exceptions may be permitted where exchanges would result in acquisition of lands with greater public values or when lands can be better managed by another agency.

16. These lands will be avoidance areas for utility corridors.

MANAGEMENT AREA 11: HISTORICAL AND CULTURAL SITES

Description

Management Area 11 consists of scattered sites within or adjacent to BLM-administered lands that are protected because of historical and cultural significance. These include Garnet, Coloma, Reynolds City, Copper Cliff, Blackfoot City, Beartown, Bearmouth, and other sites that are eligible for the National Register of Historic Places.

Management Goal

Insure that eligible historical and cultural sites are preserved and protected.

Management Guidelines

1. Livestock grazing generally will be permitted where compatible with maintaining historical values. However, there may be areas where grazing will not be permitted in order to meet management goals.

2. Oil and gas leases will be issued with standard stipulations and special stipulations as needed.

3. Withdrawals from mineral entry will be sought for these sites. Locatable minerals, where not withdrawn, will be regulated by 3809 Regulations. Mining activities will be guided by management goals.

4. Mineral material permits will not be issued.

5. Fire will not be used as a management tool.

6. Commercial forest land is set aside.

7. Noncommercial forest land is unavailable for wood product harvest.

8. Firewood collection will not be authorized unless compatible with management goals.

9. Road and trail construction will be permitted to provide public access and interpretive facilities to the extent that the historical and cultural values are not compromised.

10. Recreation will be limited to day use activities, unless provided for in special site direction. Recreation development is permitted, as necessary, for site protection and interpretation.

11. This area will generally be closed to motorized vehicle use. Exceptions may be permitted for snowmobile use.

12. Management practices will follow guidelines for retention and partial retention under Visual Resource Management Classes II and III. Areas where the visual quality objective is not being met will be rehabilitated.

13. Fire suppression methods will be selected to minimize or eliminate the impact on historical site values.

14. These lands generally will remain in public ownership. However, exceptions may be permitted where exchanges would result in acquisition of lands with greater public values or when lands can be better managed by another agency.

15. These lands will be avoidance areas for utility corridors.

MANAGEMENT AREA 12: VISUAL CORRIDOR

Description

Management Area 12 consists of lands with high visual sensitivity that are available for varying degrees of resource management. These lands are generally foreground and middle ground viewing areas from major travel and recreation corridors.

Management Goals

1. Maintain or improve visual quality for highly sensitive, scenic areas.

2. Under the principles of sustained yield, manage suitable and available commercial forest land with operational restrictions to maintain or improve visual qualities.

3. Provide for dispersed recreational use opportunities, wildlife habitat, and livestock use within the constraints of Goal 1.

4. Maintain site productivity, water quality, and stream stability.

Management Guidelines

1. Mitigation measures will be designed to protect the values associated with the highly sensitive areas as part of the environmental analysis process for projects within the foreground viewing area.

2. Livestock grazing generally will be permitted.

3. Oil and gas leases will be issued with standard stipulations and special stipulations as needed.

4. Locatable minerals will be regulated by 3809 Regulations. Mining activities will be guided by management goals.

5. Mineral material permits will be considered on a case-by-case basis and may be issued if consistent with visual quality objectives.

6. Wildfire suppression methods that maintain visual quality will be selected whenever possible.

7. Prescribed burning will be permitted to the extent consistent with visual quality objectives.

8. Range and wildlife improvements are generally allowed. To the extent possible they should blend with the natural surroundings and follow natural breaks.

9. Riparian areas not designated Management Area 1 or Management Area 2 will be recognized in activity plans, and Best Management Practices for the protection of water quality and riparian features will be applied. The width of the riparian influence zone will be determined on a site-specific basis.

10. Timber management activities will be designed to maintain or improve visual qualities.

11. Noncommercial forest land may be considered for wood product harvest only when scheduled timber sales on adjacent commercial forest land provide an opportunity for sanitation or salvage, or when multiple use management goals require silvicultural treatment or habitat improvement to obtain desired stand structure and composition.

12. Firewood collection generally will be authorized. Authorization may be restricted as needed to achieve management goals.

13. Roads shall be concealed by vegetation, if possible, and follow natural landforms. Cut and fill areas will be kept to a minimum.

14. A variety of dispersed recreation activities are permitted and may be supported by construction of trails and trailheads.

15. Motorized vehicle use will be restricted to open roads and trails. Exceptions may be permitted for snowmobile use.

16. Seasonal or yearlong road closures will be permitted to achieve management goals for Management Area 12 or for adjacent management areas.

17. Management practices will follow the guidelines for Visual Resource Management Class II or III.

18. These lands may be available for exchange or sale. All proposals will be evaluated.

19. These lands may be available for consideration as utility corridors if compatible with management goals.

MANAGEMENT AREA 13: NONFOREST HABITAT

Description

Management Area 13 is a grassland and shrubland complex with minor inclusions of forest. It includes wet meadows, dry parks, and open grassland and shrubland varying in size from a few to several hundred acres. These lands provide high wildlife and livestock forage values.

Management Goals

1. Manage nonforest habitat to maintain or enhance forage for livestock and wildlife.

2. Maintain or enhance adjoining timber stands for wildlife cover.

3. Maintain site productivity, water quality, and stream stability.

4. Provide opportunities for a variety of dispersed recreation activities in a natural setting.

Management Guidelines

1. Livestock grazing will generally be permitted. Where wildlife habitat is important, grazing will be regulated to maintain sufficient forage to meet established big game needs.

2. Oil and gas leases will be issued with standard stipulations.

3. These areas will be available for mineral production and will be regulated by 3809 Regulations. Mining activities will be guided by management goals.

4. Prescribed burning may be used to accomplish wildlife habitat and livestock forage objectives.

5. Riparian areas not designated Management Area 1 or Management Area 2 will be recognized in activity plans, and Best Management Practices for the protection of water quality and riparian features will be applied. The width of the riparian influence zone will be determined on a site-specific basis.

6. Generally, any forest inclusions in this management area are unsuitable and unavailable for timber production and are not included in the sustained yield timber production base.

7. Firewood collection opportunities generally will not be available on nonforest land.

8. Emphasis will be placed on locating roads away from meadows and parks.

9. A variety of dispersed recreation activities are permitted and may be supported by construction of trails and trailheads. Seasonal restrictions on dispersed recreation may be required to achieve wildlife management objectives.

10. Motorized vehicle use is restricted to open roads and trails. Exceptions may be permitted for snowmobile use.

11. Seasonal or yearlong road closures will be permitted to achieve management goals for Management Area 13 or adjacent management areas.

12. Management practices will follow guidelines for Visual Resource Management Class III or IV, except in visually sensitive areas identified in the Resource Management Plan.

13. These lands may be included in the full range of land tenure possibilities. All proposals will be evaluated.

14. These lands may be available for consideration as utility corridors if compatible with management goals.

MANAGEMENT AREA 14: MINERAL PRODUCTION AREA

Description

Management Area 14 consists of active or recently active mineral extraction and processing operations and the immediate surrounding vicinity. Total acreages in this management area will fluctuate as other mining operations are identified or old operations are reclaimed.

Management Goals

1. Manage or utilize other resources to a degree compatible with mineral production.

2. Restore water quality and rehabilitate site productivity and stream stability through reclamation.

Management Guidelines

1. Livestock grazing will be permitted, if consistent with management goals.

2. Oil and gas leases will be issued with standard stipulations.

3. A Notice or Plan of Operations for proposed mining activities covered under 3809 Regulations will be developed. Mining activities will be guided by management goals.

4. Mining activities will be monitored for success in meeting State of Montana water quality standards.

5. Commercial forest land is set aside. These acres may be returned to the commercial forest land base when mining operations are completed.

6. Noncommercial forest land is available for wood product harvest.

7. Firewood collection generally will be allowed.

8. Dispersed recreation uses will be allowed.

9. Seasonal or yearlong road closures will be permitted to achieve management goals for adjacent management areas. Access will be available to mining claimants.

10. Management practices will follow guidelines for Visual Resource Management Class V.

11. These lands generally will remain in public ownership, unless mineral values warrant patenting.

12. These lands may be available for consideration as utility corridors.

APPENDIX C

BEST MANAGEMENT PRACTICES FOR FORESTRY IN MONTANA (July 1989)

DEFINITIONS

1. "Hazardous substance" means a material which by its nature is toxic, dangerous to handle or dispose of, or a potential environmental contaminant, and includes petroleum products, pesticides, herbicides, chemicals, and biological wastes.

2. "Stream" means a natural water course of perceptible extent with definite beds or banks which confine and conduct continuously or intermittently flowing water. Definite beds are defined as having a sandy or rocky bottom which results from the scouring action of water flow.

3. "Streamside Management Zone (SMZ)" means the stream itself and an adjacent area of varying width where management practices that might affect water quality, fish, or other aquatic resources are modified. The streamside management zone is not a zone of exclusion but a zone of closely managed activity. The SMZ acts as an effective filter and absorptive zone for sediment; maintains shade; conserves aquatic and terrestrial riparian habitats; protects the stream channel and banks; and promotes floodplain stability.

4. "Wetlands" means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include marshes, swamps, bogs, and similar areas.

I. Roads

A. Planning and Location

1. Minimize the number of roads constructed in a watershed through comprehensive road planning, recognizing intermingled ownership and foreseeable future uses. Use existing roads where practical, unless use of such roads would cause or aggravate an erosion problem.

2. Review available information and consult with professionals as necessary to help identify erodible soils and unstable areas, and to locate appropriate road surface materials.

3. Fit the road to the topography by locating roads on natural benches and following natural contours. Avoid long, steep road grades and narrow canyons.

4. Locate roads on stable geology, including well-drained soils and rock formations that tend to dip into the slope. Avoid slumps and slide-prone areas characterized by steep slopes highly weathered bedrock, clay beds, concave slopes, hummocky topography, and rock layers that dip parallel to the slope. Avoid wet areas including moisture-laden or unstable toe slopes, swamps, wet meadows, and natural drainage channels.

5. Locate roads a safe distance from streams when roads are running parallel to stream channels. Provide an adequate streamside management zone (SMZ) to trap sediment and prevent its entry into the stream.

6. Minimize the number of stream crossings and choose stable stream crossing sites.

7. Locate roads to provide access to suitable (relatively flat and well-drained) log landing areas to reduce soil disturbance.

B. Design

1. Properly design roads and drainage facilities to prevent potential water quality problems from road construction.

2. Design roads to the minimum standard necessary to accommodate anticipated use and equipment. The need for higher standard roads can be alleviated through better road-use management.

3. Design roads to balance cuts and fills or use full bench construction (no fill slope) where stable fill construction is not possible.

4. Design roads for minimal disruption of drainage patterns. Vary road grades to reduce concentrated flow in road drainage ditches, culverts, and on fill slopes and road surfaces.

5. Design stream-crossings for adequate passage of fish (if present), minimum impact on water quality, and at a minimum, the 25-year frequency runoff (see Section III for other stream-crossing BMPs).

C. Drainage from Road Surface

1. Provide adequate drainage from the surface of all permanent and temporary road by using outsloped or

crowned roads, drain dips, or insloped roads with ditches and crossdrains. Space road drainage features so peak drainage flow on the road surface or in ditches will not exceed the capacity of the individual drainage facilities.

a. Outsloped roads provide means of dispersing water in a low-energy flow from the road surface. Outsloped roads are appropriate when fill slopes are stable, drainage will not flow directly into stream channels, and transportation safety considerations can be met.

b. For insloped roads, plan ditch gradients steep enough, generally greater than 2%, but less than 8%, to prevent sediment deposition and ditch erosion. The higher gradients may be suitable for more stable soils; use the lower gradients for less stable soils.

c. Properly constructed drain dips can be an economical method of channeling surface flow off the road. Construct drain dips deep enough into the subgrade so that traffic will not obliterate them.

2. Skew ditch relief culverts 20 to 30 degrees toward the inflow from the ditch to improve inlet efficiency. Protect the upstream end of crossdrain culverts from plugging.

3. Where possible, install ditch relief culverts at the gradient of the original ground slope; otherwise armor outlets with rock or anchor downspouts to carry water safely across the fill slope.

4. Provide energy dissipators (rock piles, logs, etc.) where necessary at the downstream end of ditch relief culverts to reduce the erosion energy of the emerging water. Crossdrains, culverts, water bars, dips, and other drainage structures should not discharge onto erodible soils or fill slopes without outfall protection.

5. Prevent downslope movement of sediment by using sediment catch basins, drop inlets, changes in road grade, headwalls, or recessed cut slopes.

6. Route road drainage through SMZ, filtration fields, or other sediment settling structures. Install road drainage features above stream crossings to route discharge into filtration zones before entering a stream.

D. Construction (see also Section III on stream crossings)

1. Keep slope stabilization, erosion and sediment control work as current as possible with road construction. This includes installing drainage features as part of the construction process. Complete or stabilize road sections within the same operating season, ensuring that drainage features are fully functional prior to spring or fall runoff and that major road sections are not left in an unstable condition over winter.

2. Stabilize erodible, exposed soils by seeding, compacting, riprapping, benching, mulching, or other suitable means prior to fall or spring runoff.

3. At the toe of potentially erodible fill slopes, particularly near stream channels, pile slash in a row parallel to the road to trap sediment. When done concurrently with road construction, this practice can effectively control sediment movement and can provide an economical way of disposing of roadway slash. Limit the height, width and length of these "slash windows" so not to impede wildlife movement.

4. Minimize earth-moving activities when soils appear excessively wet. Do not disturb roadside vegetation more than necessary to maintain slope stability and to serve traffic needs.

5. Construct cut and fill slopes at stable angles

6. Avoid incorporating potentially unstable woody debris in the fill portion of the road prism. Where possible, leave existing rooted trees or shrubs at the toe of the fill slope to stabilize the fill.

7. Consider road surfacing to minimize erosion.

8. Place debris, overburden, and other waste materials associated with construction and maintenance activities in a location to avoid entry into streams. Include these waste areas in soil stabilization planning for the road.

9. Minimize sediment production from borrow pits and gravel sources through proper location, development and reclamation.

10. When using existing roads, reconstruct only to the extent necessary to provide adequate drainage and safety; avoid disturbing stable road surfaces.

E. Maintenance

1. Grade road surfaces only as often as necessary to maintain a stable running surface and to retain the original surface drainage.

2. Maintain erosion control features through periodic inspection and maintenance, including cleaning dips and crossdrains, repairing ditches, marking culvert inlets to aid in location, and clearing debris from culverts.

3. Avoid cutting the toe of cut slopes when grading roads or pulling ditches.

4. When plowing snow for winter timber harvest, provide breaks in snow berm to allow road drainage.

5. Haul all excess material removed by maintenance operations to safe disposal sites and stabilize these sites to prevent erosion. Avoid side-casting material into streams or locations where erosion will carry materials into a stream.

6. Avoid using roads during wet periods if such use would likely damage the road drainage features.

7. Upon completion of seasonal operations, the road surface should be crowned, outsloped, insloped, or water-barred. Remove berms from the outside edge where runoff is channeled

8. Leave abandoned roads in a condition that provides adequate drainage without further maintenance. Close these roads to traffic; reseed and/or scarify; and, if necessary, recontour and provide water bars or drain dips.

II. Timber Harvesting, Streamside Management and Site Preparation

A. Harvest Design

1. Plan timber harvest in consideration of your management objectives and the following:

a. Soils and erosion hazard identification;
b. Rainfall;
c. Topography;
d. Silvicultural Objectives;
e. Critical components (aspect, water courses, landform, etc.);
f. Habitat types;
g. Potential effects on water quality and beneficial water uses;
h. Watershed condition and cumulative effects of multiple timber management activities on water yield and sediment production;
i. Wildlife habitat.

2. Use the logging system that best fits the topography, soil type, and season, while minimizing soil disturbance and economically accomplishing silvicultural objectives.

3. Use the economically feasible yarding system that will minimize road densities.

4. Design and locate skid trails and skidding operations to minimize soil disturbance. Using designated skid trails is one mean of limiting site disturbance and soil compaction. Consider the potential for erosion and possible alternative yarding systems prior to planning tractor skidding on steep or unstable slopes.

5. Locate skid trails to avoid concentrating runoff and provide breaks in grade. Locate skid trails and landings away from natural drainage systems and divert runoff to stable areas. Limit the grade of constructed skid trails on geologically unstable, saturated, highly erosive, or easily compacted soils to a maximum of 30%. Use mitigating measures, such as water bars and grass seeding, to reduce erosion on skid trails.

6. Minimize the size and number of landings to accommodate safe, economical operation. Avoid locating landings that require skidding across drainage bottoms.

B. Streamside Management

1. Designate streamside management zones to provide stream shading, soil stabilization, sediment and water filtering effects, and wildlife habitat. The SMZ encompasses a strip at least 25-feet wide on each side of a stream, measured from the ordinary high-water mark definable bank. The width of the SMZ extends beyond the 25-foot minimum to include wetlands along the stream bottom and to provide additional protection in areas of steep slopes or erosive soils. "Stream" means a natural water course of perceptible extent with definite beds or banks which confine and conduct continuously or intermittently flowing water. Definite beds are defined as having a sandy or rocky bottom which results from the scouring action of water flow. Consult with forestry professionals, soil and water conservation specialists, or biologists if assistance is needed in setting appropriate SMZ boundaries.

2. Consider the following practices when harvesting timber in the streamside management zone:

a. Retain hardwood trees, sub-merchantable conifers, and shrubs adjacent to the stream.

b. Retain trees necessary for bank stabilization and as a future source of large woody debris to the stream channel. In the proper locations, large woody debris in the stream channel helps to dissipate stream energy, stabilize banks, and form pools that trap sediment and provide essential fish habitat.

c. When clearcutting up to the stream edge, consider the length of stream channel opened to the sun. Where possible, keep continuous openings under 600 feet of stream length. This helps to prevent increases in the water temperature and promotes wildlife habitat diversity.

d. Recognize that in some soil and drainage types, clearcutting can cause marked increases in the water table, cold-air ponding, and grass/shrub competition. All of these factors can inhibit conifer regeneration. To ensure conifer reestablishment, some mature trees may need to be left on site.

e. Maintain or provide sufficient ground cover to trap sediment. Hand-scalping and planting may be preferable to machine scarification or burning within the SMZ. Whole-tree or tree-length yarding can reduce the need for slash disposal in the SMZ.

f. Steep slopes containing material that could roll downslope and fall into a stream during burning should receive special attention. Trees logged along streams can be high-stumped to help prevent this debris build up in streams. A slash-free zone may be necessary to maintain a streamside vegetation if site preparation will involve burning on steep ground adjacent to the SMZ.

3. Minimize operation of wheeled or tracked equipment within the SMZ, and avoid equipment operation in wetlands, except when the ground is frozen (see Section IV on winter logging). Do not operate equipment on stream banks.

4. Use directional falling for harvest operations in the SMZ or wetlands. Avoid falling trees or leaving slash in streams or water bodies. Limb or top trees above the high-water mark.

5. Suspend the lead end of the log during skidding whenever possible, and use cables to end-line logs out of SMZs and wetlands when ground skidding systems are employed. Logs should be fully suspended when skyline skidding across a stream and immediately above streambanks. Ground skidding through any perennial stream requires a 310 permit (see Section III on stream crossings.

6. Avoid decking logs within the ordinary high-water mark of any stream.

C. Other Harvesting Activities

1. Tractor skid when compaction, displacement, and erosion will be minimized. Avoid tractor or wheeled skidding on unstable, wet, or easily compacted soils and on slopes that exceed 40% unless operation can be conducted without causing excessive erosion. Avoid skidding with the blade lowered.

2. For each landing, skid trail, or fire trail, provide and maintain a drainage system to control the dispersal of water and to prevent sediment from entering streams.

3. Install necessary water bars on tractor skid trails; appropriate spacing between bars is determined by the soil type and slope of the skid trails. Timely implementation is important.

4. When natural revegetation is inadequate to prevent accelerated erosion before the next growing season, apply seed or construct water bars on skid trails, landings and fire trails. A light ground cover of slash or mulch will retard erosion.

D. Slash Treatment and Site Preparation

1. Rapid reforestation of harvested areas is encouraged to reestablish protective vegetation.

2. Use brush blades on dozers when piling slash. Avoid use of dozers with angle blades. Site preparation equipment producing irregular surfaces is preferred. Care should be taken to preserve the surface soil horizon.

3. Minimize or eliminate elongated exposure of soils up and down the slope during mechanical scarification.

4. Scarify the soil only to the extent necessary to meet the reforestation objective of the site. Low slash and small brush should be left to slow surface runoff, return soil nutrients, and provide shade for seedlings.

5. Carry out brush piling and scarification when soils are frozen or dry enough to minimize compaction and displacement.

6. Carry out scarification on steep slopes in a manner that minimizes erosion. Broadcast burning and/or

herbicide application is preferred means for site preparation, especially on slopes greater than 40%.

7. Stabilize or reclaim landings and temporary roads on completion of use.

8. Remove all logging machinery debris to proper disposal site.

9. Limit water quality impacts of prescribed fire by constructing water bars in firelines; not placing slash in drainage channels; maintaining the streamside management zone; and avoiding intense fires unless needed to meet silvicultural goals.

III. Stream Crossings

A. Legal Requirements

1. Under the Natural Streambed and Land Preservation Act of 1975 (the "310 law"), any activity that would result in physical alteration or modification of a perennial stream, its bed or immediate banks must be approved in advance by the supervisors of the local conservation district. Permanent or temporary stream crossing structures, fords, riprapping or other bank stabilization measures, and culvert installations on perennial streams are some of the forestry-related projects subject to 310 permits.

Before beginning such a project, the operator must submit a permit application to the conservation district indicating the location, description, and project plans. The evaluation generally includes onsite review, and the permitting process may take up to 60 days.

2. A short-term exemption from water quality standards may be required if construction activities will add sediment to surface water and thus violate water quality standards. Contact the Water Quality Bureau in Helena at 444-2406 for additional information.

3. Stream-crossing projects initiated by federal, state or local agencies are subject to approval under the "124 permit" process (administered by the Department of Fish, Wildlife and Parks), rather than the 310 permit.

B. Design Considerations (Note: 310 permit required)

1. Cross streams at right angles to the main channel if practical. Adjust the road grade to reduce the concentration of water carried by drainage ditches to stream crossings. Direct drainage flows through an SMZ and away from the stream crossing site.

2. Avoid unimproved stream crossings. When a culvert or bridge is not feasible, locate drive-throughs on a stable, rocky portion of the stream channel.

C. Installation of Stream Crossings (Note: 310 permit required)

1. Minimize stream channel disturbances and related sediment problems during construction of road and installation of stream crossing structures. Do not place erodable material into streams channels. Remove stockpiled material from high water zones. Locate temporary construction bypass roads in locations where the stream course will have minimal disturbance. Time construction activities to protect fisheries and water quality.

2. When using culverts to cross small streams, install those culverts to conform to the natural stream bed and slope on all perennial streams and on intermittent streams that support fish or that provide seasonal fish passage. Place culverts slightly below normal stream grade to avoid culvert outfall barriers. Do not alter stream channels upstream from culverts, unless necessary to protect fill or to prevent culvert blockage.

3. Install culverts to prevent erosion of fill. Compact the fill material to prevent seepage and failure. Armor the inlet and/or outlet with rock or other suitable material where needed.

4. Consider dewatering stream crossing sites during culvert installation.

5. Use 1 foot minimum cover for culverts 18 to 36 inches in diameter, and a cover of one-third diameter for larger culverts to prevent crushing by traffic.

6. Use culverts with a minimum diameter of 15 inches for permanent stream crossings and cross drains.

IV. Winter Logging

A. General

1. Consider snow-road construction and winter harvesting when logging sites that are characterized by wet meadows, high-water tables, sensitive riparian conditions or other potentially significant soil erosion and compaction hazards.

2. Conduct winter logging operations when the ground is frozen or snow cover is adequate (generally more than one foot) to minimize site disturbance. Be prepared to suspend operations if conditions change rapidly and when the erosion hazard becomes high.

3. Consult with operators experienced in winter logging techniques.

B. Road Construction and Harvesting Considerations

1. For road systems across areas of poor foundation, consider hauling only during frozen periods. During cold weather, plow any snow cover off of the roadway to facilitate deep freezing of the road grade prior to hauling.

2. Before logging, mark existing culvert locations. During and after logging, make sure that all culverts and ditches are open and functional.

3. Use compacted snow for road beds in unroaded, wet or sensitive sites. Construct snow roads for single-entry harvests or for temporary roads.

4. Designate or mark all streams courses, including small streams, prior to snowfall. Conduct activities in streamside zones so that ground disturbance is minimized. Following completion of snow road use, restore stream crossings to near pre-road conditions to prevent ice dams. Do not use the stream channel for the roadway except for crossings.

5. Prior to felling in wet unfrozen soil areas, use tractors or skidders to compact the snow for skid road locations. Avoid steeper areas where frozen skid trails may be subject to erosion the next spring.

6. Return the following summer and build erosion barriers on any trails that are steep enough to erode.

7. Do not leave slash and tops in streams.

V. Hazardous Substances

A. General

1. Know and comply with regulations governing the storage, handling, application (including licensing of applicators), and disposal of hazardous substances.

2. Do not transport, handle, store, load, apply or dispose of any hazardous substance or fertilizer in such a manner as to pollute water supplies or waterways, or cause damage or injury to land, including humans, desirable plants and animals.

3. Do not store, mix, or rinse hazardous substances or fertilizers below the high-water mark or where they might enter state waters.

4. Develop a contingency plan for hazardous substance spills, including cleanup procedures and notification of the state Water Quality Bureau.

B. Pesticides and Herbicides

1. Use an integrated approach to weed and pest control, including manual, biological, mechanical, preventive and chemical means.

2. To prevent the entry of hazardous substances into surface waters:

a. Chemical treatments within the streamside management zone shall be by hand and shall be applied only to specific targets.

b. Leave a 25-foot buffer along surface waters when chemicals are being applied through ground application with power equipment.

c. For aerial application, leave at least a 50 foot buffers along live water and do not spray in the SMZ.

d. Always refer to chemical label instructions for additional guidance on use near water and required buffer zones.

3. To enhance effectiveness and prevent transport into streams, apply chemicals during appropriate weather conditions (generally calm and dry) and during the optimum time for control of the target pest or weed.

APPENDIX D

COORDINATING ELK AND TIMBER MANAGEMENT RECOMMENDATIONS

FROM THE FINAL REPORT OF THE MONTANA COOPERATIVE ELK-LOGGING STUDY 1970-1985

SECURITY DURING LOGGING OPERATIONS

Recommendation

Preparation of timber sales in elk summer range should include planning to attain minimum losses in habitat security during the period of road construction and logging.

Findings and Discussion

Entry to an area occupied by elk, for any purpose, reduces the security of the habitat in that area. Research in four different studies compared elk responses to situations ranging from large scale logging operations with all roads continuously accessible to small operations in which roads were only open to the logging contractor. Elk responses to road building and logging demonstrated that significant losses in security can be minimized when appropriate restrictions are used by the land manager. The degree of security loss is directly related to the number of acres disturbed, to the length of time the disturbance continues, and to the timing of field operations.

Displacement of elk was detected as far as four miles from the cutting units in large timber sales in which roads were open to nonlogging traffic. In one study, herd displacement was to an adjacent drainage and then beyond that drainage when the ridgeline was disturbed. In another investigation, displacement was down a ridgeline for two miles through undisturbed timber and over a point. In both cases, topographic features provided line-of-sight barriers between elk and the logging activity. Conversely, during relatively small timber sales, and particularly when roads were only open to the logging contractor, displacement of elk was generally less than one-half mile from the center of logging activities. In all studies, the time required for elk to return to the disturbed habitat was directly related to the distance they were displaced.

Security for elk can be satisfied by any habitat in which animals do not feel threatened or a habitat in which they will remain in the face of disturbance. There are a variety of ways in which the manager can reduce the distance moved by elk and simultaneously increase the probability of immediate return by animals displaced:

> Disturbance by heavy equipment can be completed in the shortest possible time, and, if possible, during periods of the year when elk are not present. It has been shown, for example, that individual elk tend to use more level ground in early summer and move to steeper ground in the late summer and fall.
>
> Adjacent drainages or areas into which elk might be expected to move can be made more secure by road closures.
>
> Logging activity can be confined to a single drainage at a time and all work completed in the shortest possible time frame. Intensive activity over a single season has far less influence on elk than a low level of intensity continued over several seasons.
>
> Displacement of elk is significantly reduced where access to the timber sale area is limited and nonlogging traffic is controlled. Recreational use of firearms by anyone working within an area closed to the general public should be prohibited.

REDISTRIBUTION OF ELK

Recommendation

Timber sales should be planned in a manner that minimizes potential problems arising from temporal redistribution of elk onto adjacent or other nearby property.

Findings and Discussion

In all four of the areas in which elk response to timber sales was studied, some movement away from the sale area was recorded. On these areas, movement by elk created no specific problems because there was adequate space available. Never-

theless, timber sales may result in local modification of the way elk utilize their home ranges. Such modifications sometimes result in increased use of nearby private lands or public lands not normally used by elk. It is usually possible to achieve greater compatibility in land use if sale planning recognizes and attempts to minimize potential problems involving increased elk use on adjacent properties where elk presence is undesirable. Knowledge of habitat use patterns by local elk herds and the availability of other nearby habitats will benefit the land manager; consultation with state and federal wildlife biologists will also be of considerable benefit in such assessments.

TRADITIONAL HOME RANGE USE BY ELK

Recommendation

Before timber sales are established and new roads are constructed, information should be obtained concerning traditional use patterns and distribution of elk harvest so that cutting can be timed and roads placed to have the least undesirable effect on both elk and elk hunting.

Findings and Discussion

Elk are very traditional in the way they distribute themselves over time and space. Home range size and shape vary considerably among individuals and areas, but there is comparatively little variation in the size and shape of home ranges used by the same animal from year to year. This is true for individuals and for herds as well. Data from frequent relocations of many elk over the course of several years has demonstrated annual home ranges varying from about 5 to nearly 200 square miles, but variations in the location of individual animals in consecutive seasons was very low. Individual elk usually use the same winter and summer areas from year to year throughout their lifetime; this traditional elk use of an area can override normal caution in an area rendered temporarily unsuitable by disturbance and habitat alteration.

Roading and logging of an area with high traditional elk use could lead to undesirable overharvest and a severe decline of the herd if hunting seasons and/or road closures are not adjusted to compensate for the reduction in habitat security. Studies of wildlife throughout the world have shown that habitat preference is learned as well as innate. This learned preference, called habitat imprinting, may be as important a consideration in elk habitat management as innate preferences. If, over several years, mortality of adult cows exceeds recruitment in a group of elk traditionally using a particular area, elk use of that area may decline to zero. Because elk are slow to pioneer and become established in a new area, local elimination may require many years before elk use is reestablished.

ROAD CONSTRUCTION AND DESIGN

Recommendation

As a part of the location and design of transportation systems, existing habitat occupancy and movement patterns and probable elk crossing areas should be identified and provisions made to maintain security for unimpeded movement.

Findings and Discussion

Both the location and density of forest roads have been shown to be disturbing to elk security on most elk ranges in North America. On study areas in Montana, most of the elk use of sideslopes in moderate to large drainages occurred above the lower third of the slope. In drainage headwaters the lower third of the slope appeared to provide the most important habitat. Elk travel routes from one drainage to another crossed ridges through saddles and were often easy to identify. Road construction in these sites resulted in declines or elimination of elk use of such crossings. Elk have also exhibited a preference for crossing ridges in sections where visibility is low and security high, often where dense timber and/or topographic visual obstructions are present. Alteration of such crossing areas can be especially critical during the hunting season.

While any road constructed will tend to reduce the security level of existing elk habitat, losses in security can be significantly reduced if initial road designs and locations recognize existing elk behavior, habitat use, and probable response to new roads. A number of considerations can help to minimize the loss of habitat security:

Locate permanent and high volume traffic roads in those areas least used by elk.

Design secondary roads, in both construction and layout,

to facilitate eventual closure. This is particularly important where roads enter drainage heads.

Maintain frequent dense cover areas adjacent to the road.

Avoid road construction in saddles or low divides frequented by elk in crossing ridges between drainages.

Construct roads to the lowest standard that will meet management objectives. In important elk range this usually implies a low-speed, singletrack construction without large cut slopes, fills, or straight stretches.

Dispose of road right-of-way slash so it does not inhibit elk movement.

Locate roads, even temporary roads, to avoid disturbance of moist sites and other areas of concentrated use by elk.

Avoid areas of important elk winter range.

ROAD MANAGEMENT

Recommendation

Where maintenance of elk habitat quality and security is an important consideration, open road densities should be held to a low level, and every open road should be carefully evaluated to determine the possible consequences for elk.

Findings and Discussion

It has been repeatedly documented, in Montana and elsewhere throughout North American elk range, that vehicle traffic on forest roads evokes an avoidance response by elk. Even though the habitat near forest roads is fully available to elk, it cannot be effectively utilized. Declines in elk use have been detected as far as two miles from open roads, but significant reductions in habitat effectiveness are usually confined to an area within a half mile. The loss of habitat effectiveness has been shown to be greatest near primary roads and least near primitive roads, greatest where cover is poor and least where cover is good, and greater during the hunting season than at any other time of the year. As a general average, habitat effectiveness can be expected to decline by one-fourth when open road densities are one mile per section and by one-half when road densities are two miles per section. Losses in habitat effectiveness for elk can be at least partially mitigated by imposing strict design and location standards during road construction. Losses can be greatly reduced through appropriate traffic control and road closures.

Roads, and the people and traffic associated with them, have a more significant influence on elk security than most other factors combined. Few considerations in forest management appear to provide a better opportunity for immediate mitigation in the management of elk habitat than road closures.

Some roads are needed for timber harvest, recreation, fire control, firewood cutting, and a variety of other purposes, including access by hunters. Where the maintenance of elk habitat security is an important consideration, requirements for public access should be identified prior to road design and construction, and all roads remaining open should be essential to an identified need.

Criteria for Road Closure Selections

Available data demonstrate that every road constructed in elk habitat is a potentially negative influence for elk. It is also clear that some roads are more disturbing than others. When choices are possible, the following criteria are suggested as guides for selection of roads to be closed in areas where elk habitat is an important consideration. As a general rule, yearlong closure is preferred to seasonal closure, but some specific advantages are possible with certain seasonal closures as noted. High priorities for closure include:

roads in the heads of drainages, saddles, and low divides;

roads through moist areas and wet meadows;

loop roads that encourage through traffic;

trunk roads with many dead-end side roads under one-half mile in length;

midslope roads in the lower two-thirds of the drainages (especially in fall);

roads in known calving areas (especially in spring);

roads in winter range concentration areas (especially in winter); and

roads in areas with poor cover (especially in fall).

AREA CLOSURES DURING THE HUNTING SEASON

Recommendation

Elk management goals and objectives should be clearly defined before imposing travel restrictions.

Findings and Discussion

Two studies in Montana involved area closures that restricted motor vehicles to a few selected roads during the general hunting season. Several other studies involved radio tracking of one or more elk during the hunting season.

The Judith Road Closure Study indicated that travel restrictions did not change elk distribution or temporal distribution of hunters. Apparently this area closure was not needed to "protect" elk where escape cover was adequate and well distributed (at least twothirds cover to one-third open). Hunters spent more time walking; consequently they reported seeing and killing more elk under the restrictions than during the unrestricted control seasons. Their unsolicited comments showed a preference for limited access because of the "higher quality" hunt it afforded.

The Ruby Road Closure Study, on the other hand, showed that area closures can cause significant changes in elk distribution and hunter use of an area. This area was characterized by a relatively open, broken forest, with gentle terrain and easy access (one-third cover to two-thirds open). During seasons of restricted vehicle access, elk stayed in the restricted area longer and in greater numbers than during seasons of unrestricted access. This resulted in a more even distribution of hunting pressure, elk sightings, and elk harvest through the season, but did not increase total amounts. Hunters also spent more time walking during the restriction period. Most hunters interviewed believed that the area closure had increased the quality of their hunt.

Road density and pattern, including off-road travel, play an important role in determining the security level an area provides to elk during the hunting season. An area with sparse cover and low road densities may provide as much security as the same sized area with heavy cover and high road densities. In the Ruby portion of this study, the security level was significantly increased by reducing the number of open roads and eliminating off-road travel. Road density and cover quality are both important when considering adequate elk security during the hunting season. Managers should be especially cognizant of the following:

Restrictions will increase the time hunters spend walking, and as a result increase the number of animals seen and possibly increase the kill. They also will generally be accepted as providing a higher quality hunt, make retrieval of downed animals more difficult, and require time and money for implementation and enforcement.

Where cover is poor (one-third or less of total area) and road densities are high (more than onehalf mile of road per square mile), restrictions will likely reduce harrassment and emigration of elk and reduce the early elk harvest, but increase the uniformity of harvest throughout the season.

Where cover is good (at least two-thirds of total area) and open road densities are low (less than one-half mile of road per square mile), restrictions will probably have less influence on elk distribution and elk harvest. Where possible, elk will seek security at least a mile from open roads.

CLEARCUTS

Recommendation

In order to assure that forage produced in clearcuts is in fact available for use by elk, openings should satisfy the following criteria:

Slash cleanup inside the clearcuts should reduce average slash depths below 1.5 feet. Slash in excess of 1.5 feet will reduce elk use by more than 50 percent.

Openings should be small, even though openings up to 100 acres may be acceptable where the adjacent forest edge supplies adequate security.

In western Montana, some security cover is provided within openings by vegetation growth, and elk use increases in older cuttings. In central Montana, the younger openings are preferred by elk; security should be provided by designing clearcuts so that the best available cover occurs at the uncut edge. Thinning adjacent to clearcuts is not recommended.

Additional security, which will significantly increase elk use of clearcut openings, can be provided with appropriate road closures.

Findings and Discussion

Graphic analyses of the density of elk pellet groups inside clearcuts in central and western Montana have identified several variables that influence elk se of these openings. The relative importance of different variables depends on the environment available to elk and the behavioral patterns associated with their use of that environment.

In central Montana, large natural openings are a normal component of both summer and winter ranges. Elk inhabiting these areas are far more tolerant of large clearcuts than elk in western Montana where large natural openings are unusual. A preference for small openings was indicated, particularly in western Montana, but cutting units as large as 100 acres may be acceptable when the adjacent forest edge supplies adequate cover.

Throughout Montana elk ranges, slash within the opening was one of the most important determinants of elk use. There was no indicated preference among slash disposal methods as long as average slash depths were reduced below 1.5 feet. Broadcast burning, however, is considered preferable to mechanical methods.

Elk response to vegetation growth inside an opening differs between central and western Montana in a way clearly related to the habitual feeding behavior of elk in the respective areas. In the west, where new growth consists of both trees and shrubs and available forage is often browse plants, elk use of openings increases as vegetation height increases. Eastward, where new growth is mostly limited to trees, and available forage is primarily grasses and forbs, elk use of openings declines as tree heights increase and understory plants are shaded. Corollary to the indicated preference for openings lacking tall cover, central Montana elk require the greater security provided by good cover at the edge of the opening. These elk also demonstrate a positive response to openings without vehicle access.

Available data do not demonstrate that clearcuts in any configuration are clearly beneficial to elk, although it is known that forage production is increased in openings. Neither is it possible to show that clearcuts have detrimental effects if the opening can be developed without reducing overall habitat security for elk.

COVER TYPE

Recommendation

Management efforts for timber and elk should be coordinated to recognize the importance of cover type in addition to habitat type. Important or key areas for elk should be identified on a site-specific basis during the planning and implementation of silvicultural practices.

Findings and Discussion

Although various classification systems, such as habitat typing, give a reasonable description of forest community composition and ecological potential, the structural characteristics or cover types can vary considerably within the classifications over time. Elk use of cover types is often specific, changing in both space and time during summer and fall. For example, moist sites may be highly preferred from June through September but not necessarily sought out in October and November. Relatively advanced seral stages and more dense timber stands may not be as important June through August as in the fall months. Cover type is usually more important than habitat type in determining elk use during summer and fall.

MOIST SITES

Recommendation

Moist summer range sites, in combination with other habitat components which are heavily used by elk, should be identified and the overall integrity of these habitat components should be maintained.

Findings and Discussion

Findings from all study areas indicate that elk prefer moist sites during the summer months (June through September). Preferred elk summer range exists when these moist sites are interspersed with other necessary habitat components, including a diversity of timber types and densities, especially near drainage heads. Such sites are often found at the heads of drainages, bordering streams or marshy meadows, or occupy-

ing moist swales or benches. These sites are usually found within the 2Abies lasiocarpa1 habitat type series (USDA, FS 1977) both east and west of the Continental Divide. In central Montana, these sites are usually found within the Abla-Caca, Abla(Pial)Vasc, Abla-Vasc (Thoc), and Abla-Luhi habitat types. In western Montana, moist sites are generally found within parts of the Abla-Luhi (Mefe), AblaClun, Abla-Mefe, Abla-Gatr, and Abla-Caca habitat types. Moist types in the 2Picea engelmannii1 series provide similar habitats.

Moist sites have been identified as a very important component of elk summer range, especially when they occur within the 2Abies lasiocarpa1 climax series. These habitats are primarily important because of their high forage production, good nutritional quality, diverse species composition, and high cover values when interspersed with trees. Because the forage is utilized after calving and prior to the breeding season, it may be important in both reproduction and winter survival.

Selective withdrawal from treatment, along with protection of peripheral zones to provide continuous cover with the uncut forest, will benefit elk. New or planned roads passing near these sites should be closed to summer and fall vehicular traffic except perhaps for light, intermittent administrative use. Roads that already occur near moist areas should be closely evaluated for travel restrictions.

Moist sites are more critical during dry summers when precipitation from the previous winter and early spring (October through May) approaches 25 percent below normal. During such years, elk will benefit if land managers shift human activities and/or livestock grazing away from moist sites, particularly in areas with little moist summer range.

ELK AND CATTLE RELATIONSHIPS

Recommendation

The effect of every proposed timber sale on elk and livestock management objectives should be evaluated. Allocation of area may be more practical and ecologically sound than allocation of forage. Cattle use of newly logged areas which have been previously used exclusively by elk should be discouraged.

Findings and Discussion

The presence and distribution of domestic cattle substantially influenced the distribution of elk on the study area which had summer range cattle allotments. Systematic observation revealed a significant tendency for elk to avoid cattle. In any habitat, the probability of elk use concurrent with cattle use was about one-half the probability of elk use in the absence of cattle.

Road construction and other associated timber harvest activities occasionally "open up" new areas for grazing or alter existing cattle grazing allotments on elk summer ranges. Such activities increase the potential for elk and cattle interactions.

WINTER RANGES

Recommendation

Timbered areas adjacent to primary winter foraging areas should be managed to maintain the integrity of cover for elk. Where timber harvest is acceptable, slash cleanup and logging should be scheduled outside the winter period.

Findings and Discussion

Elk on winter range in western Montana preferred dense timber stands and larger trees for bedding cover. Bedding sites were usually in close proximity to a feeding area such as a south facing slope with a good stand of browse or perennial grasses. Timbered areas that received moderate to heavy elk bedding use prior to logging were not used for bedding during winters following heavy selection logging. Elimination of preferred bedding sites subjected elk to decreased energy intake and increased energy output because of increased travel between suitable bedding and feeding sites.

Winter range conditions vary greatly across Montana. To the east, elk forage on grasslands and seek cover in adjacent timber stands. Snow depths are usually low to moderate, and elk wintering in these areas may venture far from timber cover when undisturbed. When snow does get deep, elk will seek cover. Logging adjacent to grassland winter ranges will normally be detrimental to elk. Forage conditions on these ranges may be improved by range rehabilitation, grazing management, or prescribed fire.

West of the Continental Divide, on important and already well-used browse ranges, the probability of improvement by logging is minimal. Where winter range quality is declining or is already poor, especially on shrub ranges, several management options offer possibilities for enhancing winter range. The presence of larger trees in a dense multistory stand is desirable. Where winter ranges are heavily forested and forage conditions are poor, the timber overstory can be removed in small patches to enhance forage production on south to west facing slopes. The design and layout openings should be planned so that adjacent forest cover on benches and finger ridges will provide thermal cover and bedding sites. Slash cleanup and logging should be scheduled outside the winter period.

Because of the relative importance of productive elk winter range and the narrow margin for error, any contemplated modification of timber stands should be planned on a site-by-site basis, with primary emphasis on maintaining adequate cover adjacent to productive forage areas. It is unlikely that winter ranges ever meet the nutritional needs of elk completely, so some winter weight loss will always be experienced. Elk productivity and, under severe conditions, survival will decrease as weight loss increases. Thus, conservation of stored energy as well as energy intake, is important to wintering elk.

APPENDIX E

MONTANA WILDERNESS STATUS SUMMARIES

The following summary tables list the current wilderness status for Montana.

Table E-1 lists the wilderness recommendations that will be transmitted with this wilderness study. Table E-2 lists BLM wilderness study areas in Montana where the studies are complete and awaiting Presidential recommendations. Table E-3 lists the present Congressional designated wilderness areas in Montana. Table E-4 lists wilderness recommendations pending before Congress for all agencies within Montana. Table E-5 lists areas still under wilderness study by other agencies within Montana.

TABLE E-1

WILDERNESS RECOMMENDATIONS TRANSMITTED BY THIS REPORT

District	*Resource Area*	*Plan Name*	*Unit Name*	*Total Acreage*	*Acres Recommended Suitable*	*Acres Recommended Non-suitable*
Butte	Garnet	Garnet Wilderness Environmental Impact Statement	Wales Creek WSA	11,580	0	11,580
Butte	Garnet	Garnet Wilderness Environmental Impact Statement	Hoodoo Mountain WSA	11,380	0	11,380
Butte	Garnet	Garnet Wilderness Environmental Impact Statement	Quigg West WSA	520	520	0

TABLE E-2
COMPLETED MONTANA BLM WILDERNESS STUDIES AWAITING PRESIDENTIAL RECOMEMENDATIONS

District	*Resource Area*	*Plan Name*	*Unit Name*	*Unit Number*	*Total Acreage*	*Preliminary Recommendations (State Director)*
Butte	Headwaters	Humbug Spires ISA Suitability Report/EIS	Humbug Spires	---	11,175	8,791 ac. Suitable 2,384 ac. Nonsuitable
Butte	Headwaters	Headwaters RA Resource Management Plan/EIS	Blind Horse Creek	MT-075-102	4,927	4,927 ac. Nonsuitable
Butte	Headwaters	Headwaters RA Resource Management Plan/EIS	Chute Mtn.	MT-075-105	3,205	3,205 ac. Nonsuitable
Butte	Headwaters	Headwaters RA Resource Management Plan/EIS	Deep Cr./ Battle Cr.	MT-075-106	3,086	3,086 ac. Nonsuitable
Butte	Headwaters	Wilderness Planning Amendment/EIS for the Headwaters RA	Black Sage	MT-075-115	5,926	5,926 ac. Nonsuitable
Butte	Headwaters	Wilderness Planning Amendment/EIS for the Headwaters RA	Yellowstone River Island	MT-075-133	53	53 ac. Nonsuitable
Miles City	Billings	Billings RA Resource Management Plan/EIS	Twin Coulee	MT-067-212	6,870	6,870 ac. Nonsuitable
Miles City	Billings	Billings RA Resource Management Plan/EIS	Pyror Mountain	MT-067-306	16,927	16,927 ac. suitable
Miles City	Billings	Billings RA Resource Management Plan/EIS	Burnt Timber Canyon	MT-067-205	3,955	3,430 ac. suitable 525 ac. nonsuitable
Miles City	Billings	Billings RA Resource Management Plan/EIS	Big Horn Tack-on	MT-067-207	4,550	2,550 ac. suitable 2,000 ac. nonsuitable
Butte	Dillon	Wilderness Planning Amendment/EIS for the Dillon RA	Ruby Mountains	MT-076-001	26,611	15,615 ac. suitable 10,996 ac. nonsuitable
Butte	Dillon	Wilderness Planning Amendment/EIS for the Dillon RA	Blacktail Mtns.	MT-076-002	17,479	10,986 ac. suitable 6,493 ac. nonsuitable
Butte	Dillon	Wilderness Planning Amendment/EIS for the Dillon RA	Farlin Creek	MT-076-034	1,139	610 ac. suitable 529 ac. nonsuitable
Butte	Dillon	Wilderness Planning Amendment/EIS for the Dillon RA	E. Fork Blacktail Deer Cr.	MT-076-007	6,180	6,180 ac. nonsuitable
Butte	Dillon	Wilderness Planning Amendment/EIS for the Dillon RA	Hidden Pasture Creek	MT-076-022	15,475	15,475 ac. nonsuitable
Butte	Dillon	Wilderness Planning Amendment/EIS for the Dillon RA	Bell Limekiln Canyons	MT-076-026	9,566	9,588 ac. nonsuitable

Butte	Dillon	Wilderness Planning Amendment/EIS for the Dillon RA	Henneberry Ridge	MT-076-028	9,756	9,756 ac. nonsuitable
Butte	Dillon	Wilderness Planning Amendment/EIS for the Dillon RA	Axolotl Lakes	MT-076-069	6,578	6,578 ac. nonsuitable
Lewistown	Phillips	Missouri Breaks Wilderness Suitability Study/EIS	Cow Creek	MT-066-256	34,050	21,590 ac. suitable 12,460 ac. nonsuitable
Lewistown	Valley	Missouri Breaks Wilderness Suitability Study/EIS	Antelope Creek	MT-065-278	13,730	13,730 ac. suitable
Miles City	Big Dry	Missouri Breaks Wilderness Suitability Study/EIS	Seven Blackfoot	MT-024-657	20,250	5,710 ac. suitable 14,540 ac. nonsuitable
Miles City	Powder River	Missouri Breaks Wilderness Suitability Study/EIS	Terry Badlands	MT-024-684	43,165	29,020 ac. sauitable 14,145 ac. nonsuitable
Lewistown	Judith	Missouri Breaks Wilderness Suitability Study/EIS	Woodhawk	MT-068-246	8,100	8,100 ac. nonsuitable
Lewistown	Havre	Missouri Breaks Wilderness Suitability Study/EIS	Ervin Ridge	MT-024-675	10,200	10,200 ac. nonsuitable
Miles City	Big Dry	Missouri Breaks Wilderness Suitability Study/EIS	Bridge Coulee	MT-024-675	5,900	5,900 ac. nonsuitable
Miles City	Big Dry	Missouri Breaks Wilderness Suitability Study/EIS	Musselshell Breaks	MT-024-677	8,650	8,650 ac. nonsuitable
Lewistown	Valley	Bitter Creek Wilderness Suitability Study/EIS	Bitter Creek	MT-064-356	59,660	59,660 ac. nonsuitable
Miles City	Powder River	Powder River Resource Management Plan/EIS	Zook Creek	MT-027-701	8,438	8,438 ac. nonsuitable
Miles City	Powder River	Powder River Resource Management Plan/EIS	Buffalo Creek	MT-027-701	5,650	5,650 ac. nonsuitable
	TOTAL BLM		NUMBER OF AREAS 30		380,875 ACRES	138,559 ACRES SUITABLE

TABLE E-3
STATUTORY WILDERNESS (ALL AGENCIES)

Agency	County(s)	Unit Name	Unit Number	Unit Acreage
BLM[1]	Madison	Bear Trap Canyon	—	6,000
	TOTAL BLM	NUMBER OF AREAS 1		6,000 ACRES
FS	Carbon, Stillwater, Sweet Grass, Park	Absaroka-Beartooth	NF 106	920,377
FS	Granite, Ravalli, Deer Lodge, Beaverhead	Anaconda-Pintlar	NF 003	157,874
FS	Flathead, Teton, Lewis & Clark, Powell	Bob Marshall	NF 005	1,009,356
FS	Lincoln, Sanders	Cabinets	NF 010	94,272
FS	Lewis & Clark	Gates of the Mtns.	NF 027	28,562
FS	Flathead Lake	Great Bear	NF 107	286,700
FS	Missoula	Mission Mtns.	NF 050	73,877
FS	Missoula	Rattlesnake	1-801	20,000
FS	Lewis & Clark, Powell	Scapegoat	NF 073	239,296
FS	Ravalli	Selway-Bitterroot	NF 074	248,893
FS	Granite	Welcome Creek	NF 103	28,135
FS[1]	Madison	Lee Metcalf	—	259,000
	TOTAL FS	NUMBER OF AREAS 12		3,366,342 ACRES
FWS	Beaverhead	Red Rock Lakes	WR-036	32,350
FWS	Sheridan	Medicine Lake National Wildlife Refuge	WR-027	11,800
FWS	Phillips	UL Bend National Wildlife Refuge	WR-047	20,847
	TOTAL FWS	NUMBER OF AREAS 3		64,997 ACRES
NPS	N/A	N/A	N/A	N/A
State Administered	N/A	N/A	N/A	N/A

[1] The 6,000-acre BLM-managed Bear Trap Canyon is one component of the 259,000-acre Lee Metcalf Wilderness. The other units in the wilderness are managed by the Forest Service.

TABLE E-4
WILDERNESS RECOMMENDATIONA PENDING BEFORE CONGRESS
(ALL AGENCIES)

Agency	County(s)	Unit Name	Unit Number	Unit Acreage
FS	The Forest Service is undergoing a reevaluation of its roadless areas through its forest planning process. Therefore, all FS RARE II recommendations for wilderness have been withdrawn pending the results of the individual forest plans. All forest plans are due by December 1985, and it is expected that the FS will submit its recommendations for wilderness to the President and Congress after that date. Until then, all roadless areas identified through RARE II in addition to new roadless areas identified through the forest planning process are considered study areas.			
FWS	Garfield	East Seven Blackfoot	FW-923-1	12,184
FWS	Phillips	Mickey Butte	FW-923-2	17,413
FWS	Phillips, Valley	Burnt Lodge	FW-923-3	22,976
FWS	Garfield	Billy Creek	FW-923-4	11,556
FWS	Garfield	West Seven Blackfoot	FW-923-5	7,096
FWS	Phillips	Antelope Creek	FW-923-6	5,382
FWS	Garfield	West Mill Creek	FW-923-7	11,896
FWS	Petroleum	Fort Musselshell	FW-923-8	8,303
FWS	Garfield	Sheep Creek	FW-923-9	12,424
FWS	Phillips	West Beauchamp	FW-923-10	6,736
FWS	Garfield	Wagon Coulee	FW-923-11	10,528
FWS	Petroleum	Alkali Creek	FW-923-12	6,592
FWS	Petroleum	Crooked Creek	FW-923-13	6,842
FWS	Garfield	East Hell Creek	FW-923-14	15,984
FWS	Garfield	East Beauchamp	FW-923-15	5,568
	TOTAL FWS	NUMBER OF AREAS 15		161,480 ACRES
NPS	Flathead, Glacier	Glacier	NP-915	917,600
NPS	Park, Gallatin	Yellowstone	NP-928	167,060
	TOTAL NPS	NUMBER OF AREAS 2		1,084,660 ACRES

TABLE E-5
STATUTORY WILDERNESS (ALL AGENCIES)

Agency	County(s)	Unit Name	Unit Number	Net Unit Acreage	Acres Recommended
FS	Ravalli	Tolan Creek	X1070	7,088	—
FS	Ravalli	Sleeping Child	X1074	21,423	—
FS	Ravalli	Swift Creek	1065	744	—
FS	Ravalli	Needle Creek	1066	1,085	—
FS	Ravalli	Selway-Bitterroot	1067	109,711	48,305
FS	Ravalli, Granite	Stony Mtn.	1808	103,266	—
FS	Ravalli	Blue Joint	1941	65,370	28,500
FS	Ravalli	Allan Mtn.	1946	102,286	—
FS	Lake	Swan River Island	LIFAA	550	—
FS	Flathead	Benchmark	X1126	6,490	—
FS	Flathead	Coal Ridge	X1127	16,480	—
FS	Flathead	Deadhorse	X1128	23,550	—
FS	Flathead	Standard Peak	X1129	7,770	—
FS	Flathead	Mt. Hefty	1481	13,720	—
FS	Flathead, Lincoln	Tuchuck	1482	19,820	—
FS	Flathead, Lincoln	Mt. Thompson Seton	TS483	71,750	—
FS	Lake, Missoula	Mission Additions	1500-1506	2,340	—
FS	Flathead	Lebeau Creek	L1507	6,210	—
FS	Flathead, Lake Missoula, Powell, Lewis & Clark, Teton, Pondera, Glacier	Bear-Marshall-Scapegoat-Swan	1485	865,178	164,945
FS	Lincoln	Zulu Creek	X166	6,400	—
FS	Lincoln	Marston Face	X172	6,000	—
FS	Lincoln	Mt. Willard-Lake Estelle	1173	256	—
FS	Lincoln	Gold Hill (West)	X176	10,200	—
FS	Lincoln	Flagstaff Mt.	X690	9,500	—
FS	Lincoln	Roberts Mt.	X691	2,700	—
FS	Sanders	West Fork Elk Cr.	X692	819	—
FS	Sanders	Rock Creek	X693	400	—
FS	Lincoln	Buckhorn Ridge	1661	27,000	—
FS	Lincoln	Scotchman Peaks	1662	64,280	36,380
FS	Lincoln	Northwest Peaks	1663	19,100	—
FS	Sanders	Trout Creek	1664	31,400	—
FS	Sanders	Cataract	1665	27,600	—
FS	Lincoln	Grizzly Peak	1667	6,000	—
FS	Lincoln	Gold Hill	1668	10,700	—
FS	Sanders, Lincoln	Cabinet Face West	1670	10,900	8,000
FS	Sanders, Lincoln	Cabinet Face East	1671	50,400	20,500
FS	Sanders	Berray Mtn.	1672	8,300	—
FS	Sanders	Government Mtn.	1673	8,600	—
FS	Sanders	Lone Cliff Smeads	1674	6,600	—
FS	Sanders	McNeeley	1675	7,700	—
FS	Sanders	McKay Creek	1676	13,500	6,700
FS	Sanders	Galena	1677	15,500	—
FS	Sanders	East Fork Elk Cr.	1678	5,000	—
FS	Sanders	Chippewa Creek	1682	2,300	400
FS	Lincoln	Ten Lakes & Contiguous Areas	1683-1683A	41,100	31,800
FS	Lincoln	Roderick	1684	24,800	—
FS	Granite	Emerine	X1423	16,161	—
FS	Granite	Sapphires	1421	116,530	—
FS	Granite	Silver King	1424	65,767	—
FS	Granite	North Carp	1425	12,042	—
FS	Granite	Upper East Fork	1426	7,361	—
FS	Deer Lodge	Storm Lake	1427	7,481	5,918

TABLE E-5 (cont.)
STATUTORY WILDERNESS (ALL AGENCIES)

Agency	County(s)	Unit Name	Unit Number	Net Unit Acreage	Acres Recommended
FS	Granite, Powell	Flint Range-Dolus Lake	1428-1429	60,297	—
FS	Silver Bow	Basin Creek	1430	9,888	—
FS	Silver Bow, Madison	Highlands	1431	20,921	—
FS	Jefferson, Silver Bow	O'Neil Creek	1432	6,511	—
FS	Jefferson	Whitetail-Haystack	1433-1434	71,249	—
FS	Granite	Fred Burr	1435	6,643	—
FS	Sanders	McGregor-Thompson	LILAQ	27,850	—
FS	Missoula	Petty Mtn.	X1202	16,980	—
FS	Missoula	Deep Creek	X1814	7,970	—
FS	Missoula	Rattlesnake	X1204	2,700	—
FS	Missoula	Reservation Divide	X1205	16,300	—
FS	Sanders	Baldy Mtn.	X1209	6,680	—
FS	Granite, Missoula	Ward Eagle	X1220	8,570	—
FS	Sanders	Teepee-Spring Cr.	X1786	14,890	—
FS	Sanders	Evans Gulch	X1811	8,830	—
FS	Sanders	Clear Creek	X1812	5,470	—
FS	Sanders	Maple Peak	1141	7,860	—
FS	Mineral	Stevens Peak	1142	600	—
FS	Mineral	Wonderful Peak	1152	1,600	—
FS	Mineral, Missoula	Hoodoo	1301	98,500	81,500
FS	Mineral	Meadow Cr-Upper N. Fork	1302	7,200	—
FS	Missoula	Marshall Peak	1781	9,400	—
FS	Sanders	Cube-Iron-Silcox	1784	38,100	—
FS	Sanders	Sundance Ridge	1785	7,220	—
FS	Sanders, Mineral	Mount Bushnell	1790	43,070	—
FS	Sanders, Mineral	Cherry Peak	1791	39,640	—
FS	Mineral	Gilt Edge-Silver Creek	1792	11,200	—
FS	Sanders	Patricks Knob-N. Cutoff	1794	17,200	—
FS	Sanders	South Siegel-S. Cutoff	1795	14,800	—
FS	Sanders	North Siegel	1796	10,000	—
FS	Mineral	Marble Point	1798	13,170	—
FS	Mineral	Sheep Mtn.-St. Line	1799	40,500	—
FS	Missoula	Stark Mtn.	1800	14,140	—
FS	Missoula	Burdette	1803	16,380	—
FS	Missoula, Ravalli	Lolo Creek	1805	15,247	—
FS	Granite	Welcome Creek	1806	1,100	—
FS	Granite	Quigg	1807	81,985	60,830
FS	Missoula	Garden Point	1809	6,500	—
FS	Park, Sweetgrass, Stillwater	North Absaroka	1371	181,759	—
FS	Meagher, Park	Crazy Mtns.	1541	87,100	—
FS	Gallatin	Bridger Mtns.	1543	45,402	—
FS	Park	Republic Mtn.	1545	700	500
FS	Park	Chico Peak	1547	10,855	—
FS	Gallatin	Gallatin Divide-Hyalite	1548	158,109	—
FS	Gallatin	Dry Canyon	1550	2,160	—
FS	Park	Beartooth	1912	5,900	—
FS	Park	Reef	1914	2,200	—
FS	Park	Lionhead	1963	32,780	22,800
FS	Lewis & Clark, Broadwater	Hedges Mtn. & Middleman Mtn.	X1613 & 1612	32,865	—
FS	Lewis & Clark, Broadwater	Hellgate Gulch	X1614	18,196	—
FS	Lewis & Clark, Broadwater, Meagher	Cayuse Mtn.	X1615	18,550	—
FS	Lewis & Clark, Powell	Lincoln Gulch	1601	8,125	—
FS	Lewis & Clark	Anaconda Hill	1602	17,461	—

TABLE E-5 (cont.)
STATUTORY WILDERNESS (ALL AGENCIES)

Agency	County(s)	Unit Name	Unit Number	Net Unit Acreage	Acres Recommended
FS	Lewis & Clark	Specimen Creek	1603	11,281	—
FS	Lewis & Clark	Crater Mtn.	1604	8,991	—
FS	Lewis & Clark, Powell	Ogden Mtn.	1605	12,140	—
FS	Lewis & Clark, Powell	Nevada Mtn.	1606	49,530	—
FS	Lewis & Clark, Powell	Jericho Mtn.	1607	8,968	—
FS	Lewis & Clark	Lazyman Gulch	1608	11,928	—
FS	Powell, Jefferson	Electric Peak	1609	46,497	—
FS	Lewis & Clark	Gates of the Mtns.	1610	11,717	9,974
FS	Lewis & Clark	Devils Tower	1611	7,018	—
FS	Broadwater, Meagher	Camas Creek	1616	28,286	—
FS	Broadwater, Meagher	Mount Baldy	1617	16,114	—
FS	Broadwater, Meagher	Grassy Mtn.	1618	6,444	—
FS	Meagher	Ellis Canyon	1619	8,636	—
FS	Broadwater, Meagher	Irish Gulch	1621	7,330	—
FS	Carbon	Lost Water Canyon	1362	9,800	9,800
FS	Carbon	Red Lodge Creek-Hellroaring	1363	14,760	—
FS	Carbon	Burnt Mtn.	1364	9,320	—
FS	Carbon, Stillwater	Fishtail-Saddleback Mtn.	1366	16,560	—
FS	Stillwater-Sweetgrass	West of Woodbine	1369	2,000	—
FS	Carbon	Black Butte	1368	880	—
FS	Powder River	Cook Mtn.	1370	11,700	—
FS	Rosebud	King Mtn.	1372	11,700	—
FS	Carbon	Line Cr. Plateau	1911	20,680	—
FS	Carbon	Rock Creek	1913	200	—
FS	Lewis & Clark	Sawtooth	1721	15,500	—
FS	Cascade, Meagher	Tenderfoot-Deep Creek	1726	88,400	—
FS	Cascade	Pilgrim Creek	1727	49,500	—
FS	Cascade, Judith Basin	Paine Gulch	1728	8,500	—
FS	Cascade	Sawmill Creek	1729	12,800	—
FS	Judith Basin	TW Mtn.	1730	8,500	—
FS	Judith Basin, Cascade	Big Baldy	1731	44,000	—
FS	Judith Basin	Granite Mtn.	1732	10,580	—
FS	Judith Basin	Tollgate-Sheep	1733	26,800	—
FS	Judith Basin	Mount High	1735	32,300	—
FS	Choteau, Cascade, Judith Basin	Highwood-Baldy	1737	15,600	—
FS	Choteau, Judith Basin	Highwoods	1738	24,100	—
FS	Meagher, Wheatland	Bluff Mtn.	1740	37,120	—
FS	Meagher	Spring Creek	1741	19,800	—
FS	Meagher	Box Canyon	1742	11,647	—
FS	Meagher	Castle Mtns.	1743	29,600	—
FS	Meagher	North Fork of Smith	1744	8,800	—
FS	Meagher	Calf Creek	1745	11,020	—
FS	Meagher	Eagle Park	1746	6,300	—
FS	Beaverhead	Beaver Lake	X1003	13,474	—
FS	Beaverhead	Saginaw Creek	X1004	8,493	—
FS	Beaverhead	Tash Peak	X1005	62,119	—
FS	Beaverhead	West Pioneers	X1006	90,750	—
FS	Beaverhead	Call Mtn.	X1009	10,179	—
FS	Beaverhead	Cattle Gulch Ridge	X1010	18,891	—
FS	Beaverhead	Fleecer	X1011	36,873	—
FS	Deer Lodge, Beaverhead	Granulated Mtn.	X1012	16,266	—
FS	Beaverhead	Bear Creek	X1015	8,252	—
FS	Beaverhead	Mckenzie Canyon	X1016	33,652	—

TABLE E-5 (cont.)
STATUTORY WILDERNESS (ALL AGENCIES)

Agency	County(s)	Unit Name	Unit Number	Net Unit Acreage	Acres Recommended
FS	Beaverhead	Sourdough Peak	X1017	14,838	—
FS	Beaverhead	Timber Butte	X1018	5,018	—
FS	Beaverhead	Dixon Mtn.	X1019	3,982	—
FS	Beaverhead	Four Eyes Canyon	X1020	6,856	—
FS	Madison	Sheep Mtn.	X1021	32,115	—
FS	Madison	Crockett Lakes	X1022	6,830	—
FS	Madison	Cherry Lakes	X1023	12,940	—
FS	Madison	Vigilante	X1024	16,458	—
FS	Madison, Beaverhead	Snowcrest Mtn.	X1025	97,630	—
FS	Madison	Black Butte	X1026	39,787	—
FS	Madison	Big Horn Mtn.	X1027	50,390	—
FS	Madison	Lone Butte	X1028	14,138	—
FS	Madison, Beaverhead	Freezeout Mtn.	X1029	95,098	—
FS	Beaverhead	Anderson Mtn.	X1942	48,451	—
FS	Beaverhead	Goat Mtn.	X1944	9,454	—
FS	Deer Lodge, Beaverhead	North Big Hole	1001	56,779	6,571
FS	Beaverhead	East Pioneer	1008	144,558	80,273
FS	Madison	Middle Mtn.-Tobacco Roots	1013	93,327	—
FS	Madison	Potosi	1014	5,465	—
FS	Beaverhead	West Big Hole	1943	130,660	55,014
FS	Beaverhead	Italian Peak	1945	90,917	12,907
FS	Beaverhead	Garfield Mtn.	1961	42,777	—
FS	Beaverhead	Mt. Jefferson	1962	4,474	—
	TOTAL FS	NUMBER OF AREAS 180		5,611,789 ACRES	691,617 ACRES
NPS	NPS	Big Horn Canyon	—	7,645	—
	TOTAL NPS	NUMBER OF AREAS 1		7,645 ACRES	—

"X" before the unit number indicates a new roadless area that was identified through the forest planning process, not through RARE II.

GLOSSARY

ACEC. Area of Critical Environmental Concern. An area within the public lands where special management attention is required to protect and prevent irreparable damage to important historic values, cultural values, scenic values, fish and wildlife resources, or other natural systems; or to protect life and safety from natural hazards.

ALLOWABLE CUT. The amount of timber which can be harvested on an annual or decadal basis consistent with the principle of sustained yield. The allowable cut includes all planned timber harvest volumes exclusive of such products as Christmas trees, branches, and cones.

AUM. Animal Unit Month. The amount of forage necessary for the complete sustenance of one cow, or its equivalent (one horse or five sheep, all over six months old) for one month; also, a unit of measurement of grazing privilege.

AVAILABLE COMMERCIAL FOREST LAND. That portion of the timber production base available or remaining after consideration of other resource values and resolution of identified conflicts in the RMP process, and after wilderness study areas are identified.

AVOIDANCE AREAS. Land areas generally unsuitable for inclusion in utility corridors because they pose particular land use or environmental impacts that would be difficult or impossible to mitigate. This may vary by type of facility.

BEST MANAGEMENT PRACTICES. See BMP.

BIG GAME SPECIES. Those species of large mammals normally managed as a sport hunting resource.

BLACKFOOT FORESTRY PROTECTIVE ASSOCIATION (BFPA). A private organization established to provide wildland fire protection to private rural lands. Lands that the BFPA was responsible for constituted a wildland fire protection district somewhat comparable to the present rural fire districts. The lands were predominantly private (primarily Anaconda Company), although some BLM lands were also covered. Landowners within the district were assessed a fee according to land base. With those fees the Association hired firefighters and purchased fire protection equipment. They also constructed roads and trails for fire access and fire prevention.

The Association was begun in the early 1930s. In 1971 it dropped out of fire protection; however, it is still legally viable as an association with funding that is used for other functions than fire. Its name was derived from the Blackfoot River drainage because the district boundary encompasses all of the drainage.

BLM. Bureau of Land Management.

BMP. Best Management Practices. These practices are listed in Appendix C.

BOARD FOOT. A unit of solid wood, one-foot square and one-inch thick.

BUFFER STRIP. Designated land along the perimeter of a special feature that is set up to resist, absorb, or otherwise protect the feature from the effects of other land uses.

BUFFER ZONE. Same as Buffer Strip.

CFL. Commercial Forest Land. Forest land that is now producing or is capable of producing at least 20 cubic feet per acre per year of commercial coniferous tree species.

CHERRYSTEMMED. The description of a long, narrow protrusion into the boundary of a wilderness study area.

CLEARCUT. An area where all trees are harvested both merchantable and unmerchantable.

COMMERCIAL THINNING. Partial cuttings made in merchantable stands (40 to 70 years old) in order to stimulate the growth of remaining trees and increase total yield from the stand.

CULTURAL RESOURCES. Any cultural property, including records and physical remains related to such property, and any traditional lifeway value.

DEVELOPABLE DEPOSITS. Concentrations of metallic minerals or oil and gas that could be feasibly and economically extracted.

DISPERSED RECREATION. A type of recreation that requires a variety of sites yet needs no special facilities.

ECOTYPE. An element of a (linnaen) species, separable as being associated with particular habitat factors. A community of plant species that are associated by habitat factors such as soil type, precipitation, temperature, aspect, etc.

EIS. Environmental Impact Statement. A formal document to be filed with the Environmental Protection Agency that considers significant environmental impacts expected from implementation of a major federal action.

ELK SUMMER/FALL HABITAT COMPONENTS. These are described under Management Area 4 (MA 4) description in Appendix B. See also Habitat Components.

ENDANGERED SPECIES. Those species of plants or animals classified by the Secretary of the Interior or the Secretary of Commerce as endangered, pursuant to Section 4 of the Endangered Species Act. Means any species which is in danger of extinction throughout all or a significant portion of its range.

FLPMA. Federal Land Policy and Management Act of 1976.

FORAGE. Vegetation of all forms available for animal consumption.

FS. United States Forest Service.

GRA. Garnet Resource Area. The GRA is located in northwestern Montana and is part of the Butte District of the Bureau of Land Management.

GRANITIC INTRUSION. A geologic process whereby molten igneous rock of the granitic type is implaced into previously existing rocks. This process often alters the older rocks and may result in deposits of economic minerals.

HABITAT. A specific set of physical conditions that surround the single species, a group of species, or a large community. In wildlife management, the major elements of habitat are considered to be food, water, cover, and living space.

HABITAT COMPONENTS. The same as Elk Summer/Fall Habitat Components described under Management Area 4 (MA 4) in Appendix B.

HABITAT TYPE. An aggregation of all land areas potentially capable of producing similar plant communities at climax.

IGNEOUS. Formed by solidification from a molten or partially molten state.

INTRUSIVE. Having, while fluid, penetrated into or between other rocks, but solidifying before reaching the surface.

KEY ELK SUMMER AND FALL HABITAT. An area of summer and fall elk habitat containing a high density of big game habitat components.

LEASABLE MINERALS. (1) All minerals except salable minerals on acquired lands. (2) All minerals on the Outer Continental Shelf. (3) Coal; phosphate; oil; gas; chlorides, sulphates, carbonates, borates, silicates or nitrates of potassium and sodium; sulphur in the states of Louisiana and New Mexico; native asphalt, solid and semisolid bitumen and bituminous rock including oil-impregnated rock or sands from which oil is recoverable only by special treatment after the deposit is mined. (4) Geothermal resources and associated byproducts (Maley 1983).

LOCATABLE MINERALS. Minerals or materials subject to disposal and development through the Mining Law of 1872 (as amended). Generally includes metallic minerals such as gold and silver and other materials not subject to lease or sale (some bentonites, limestone, talc, some zeolites, etc.)

MA. Management Areas.

MANAGEMENT AREA PRESCRIPTIONS. A list of the goals and guidelines for managing units of public land with similar resource potentials and limitations. The management area prescriptions are based on resource capabilities, public issues, legal requirements, and policy considerations.

MANAGEMENT AREAS. Units of public land with similar resource potentials and limitations that are designated for management under a common set of management goals and guidelines. Management area boundaries do not always follow easily located topographic features or legal subdivisions. The boundaries are flexible to assure proper management of resources identified through additional on-the-ground reconnaissance and project planning.

MBF. Thousand Board Feet. A measure of timber volume.

MDFWP. Montana Department of Fish, Wildlife, and Parks.

MINERAL LICK. A natural or artificial site used by big game species as a source of unbound nutrients or minerals.

MINING REGULATIONS. Regulations that govern the mining of locatable minerals on public lands.

43 CFR 3809 Regulations. Regulations that govern surface disturbance from mining on public lands under the 1872 Mining Law.

43 CFR 3802 Regulations. Regulations that govern mining operations on Wilderness Study Areas (WSAs).

43 CFR 8560.4-6 Regulations. Regulations that pertain to authorized mining on wilderness areas.

MOTORIZED VEHICLE USE. The use of all motorized vehicles including highway and off-road vehicles.

NEPA. National Environmental Policy Act.

NONCOMMERCIAL FOREST. Land that is not able to yield at least 20 cubic feet of wood per acre per year of commercial species, or land that is capable of producing only noncommercial tree species.

NONFOREST HABITAT. Areas within a forest that are not capable of maintaining a crown cover of at least ten percent of forest trees. Examples are rock outcrops, talus slopes, roads, and urban areas.

NO SURFACE OCCUPANCY. The surface resources of a lease may not be disturbed by oil and gas development. However, oil and gas may be developed by directional drilling.

NOTICE. (Required for Disturbance of Five Acres or Less) Operators on project areas whose operations, including access across federal lands, cause a cumulative surface disturbance of five acres or less during any calendar year must file a notice with the Bureau of Land Management. 43 CFR 3809.1-3. A project area is defined in 43 CFR 3809.0-5(i.) as a single tract of land upon which an operator is, or will be, conducting operations. It may include more than one mining claim under one ownership as well as federal lands on which an operator is exploring or prospecting prior to locating a mining claim. Before an operator may conduct additional operations under another notice, all lands disturbed under a previous notice must be reclaimed. Reclamation is defined in 43 CFR 3809.5(j) as taking such reasonable measures as will prevent unnecessary or undue degradation of the federal lands, including reshaping land disturbed by operations to an appropriate contour. Revegetation of disturbed areas may be necessary so as to provide a diverse vegetative cover (see Appendix D) (Maley 1983).

NPS. National Park Service.

NWPS. National Wilderness Preservation System.

ORV. Off-road Vehicle. Any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other natural terrain; except that such term excludes any registered motorboat; any fire, military, emergency, or law enforcement vehicle when used for emergency purposes; and any vehicle whose use is expressly authorized by the respective agency head under a permit, lease, license, or contract.

OVERTHRUST BELT. A geologic structure extending from southern Canada to Utah along the Continental Divide. The structure contains oil and gas reserves.

PARENT MINERAL. The type of rock that has formed a given soil.

PLACER MINING. Mining an alluvial or glacial deposit such as sand or gravel that contains particles of gold or other valuable minerals. The mineral is separated from the nonmineral substances by washing.

PLAN OF OPERATIONS. (Required for Disturbance of More Than Five Acres or Mining in Special Areas) A plan of operation must be submitted to the BLM if surface disturbance exceeds five acres for a single calendar year, or if the operations are proposed in the California Desert Conservation Area; areas designated for potential addition to, or an actual component of the National Wild and Scenic Rivers System; designated Areas of Critical Environmental Concern; areas designated as part of the National Wilderness Preservation System which are administered by the BLM; areas withdrawn from operation of the mining laws in which valid existing rights are being exercised; and areas designated as closed or limited to off-road vehicle use. 43 CFR 3809.1-4 (see Appendix D) (Maley 1983).

PRESCRIBED FIRE. The use of fire, under approved weather and fuel condition parameters, for vegetative manipulation and reduction of timber sale residue.

PRIMITIVE AND UNCONFINED TYPES OF RECREATION. Nonmotorized and nondeveloped types of outdoor recreational activities.

PUBLIC LANDS. Federal lands managed by the Bureau of Land Management.

RAPTORS. A functional group of birds including all birds of prey such as eagles, hawks, owls, and vultures.

REFORESTATION. Reestablishment of a tree crop on forest land.

REGENERATION. The renewal of a commercial tree crop, whether by natural or artificial means; also, the young crop itself.

RIPARIAN. An area identified by the presence of vegetation that requires free or unbound water or conditions more moist than normally found in the area.

RMP. Resource Management Plan. The system that provides a step-by-step process for considering multiple resource values, resolving conflicts, and making resource management decisions.

RMP PROCESS. A process to weigh the effects of applying various mixes of management area prescriptions to the public lands of the resource area. Through alternative formulation and impact analysis, management area prescriptions are cho-

sen that recognize the resource potentials and limitations of the public land and best achieve the principles of multiple use management and sustained yield.

SALVAGE CUTTING. The cutting of trees that are dead, dying, or deteriorating before their timber becomes worthless.

SANITATION CUTTING. Removal of individual trees killed or injured by fire, insects, disease, etc.

SEASONAL RESTRICTION. A restriction placed on resource development and use. The restriction is applied to protect surface resources during a time when activities would adversely affect them.

SECURITY AREAS. These are areas where elk may remain or move to following disturbing activities such as logging or hunting. Hiding cover (or security cover) alone will not constitute elk security. See also Security Habitat.

SECURITY COVER. Vegetation capable of hiding 90 percent of a standing adult elk from human view at less than 200 feet distance. Generally, a minimum of 200 trees per acre 8 feet tall meets security requirements on forest regeneration units.

SECURITY HABITAT. Same as Security Area.

SEED TREE CUTTING. Timber harvest that removes most mature trees in one cut leaving a small number of seed bearing trees.

SEISMIC EXPLORATION. A method of oil and gas exploration that uses sound vibrations to map underground strata.

SELECTION CUTTING. Timber harvest that removes mature trees at 5 to 20-year intervals. This method achieves an uneven-age timber stand.

SHELTERWOOD CUTTING. A series of partial cuttings designed to establish a new crop of trees under the protection of the old.

SPECIAL FEATURES. Same as Supplemental Values.

STANDARD METROPOLITAN STATISTICAL AREA (SMSA). In Montana an SMSA is an area with one central city of 50,000 or more population. Billings and Great Falls are the only two SMSAs in the state (1980 census).

STIPULATION. A term or condition of an agreement or contract. Condition to implementing a proposed action in order to minimize the effects of that action on the human environment. For proposed actions pertaining to oil and gas resources, standard stipulations are automatically applied and special stipulations may be applied as well.
Standard stipulations are included as a part of every lease agreement as conditions which provide protection for other resource values or land uses. They are described on Montana BLM form MT-3109-1 (example included in Appendix E of the Garnet RMP/EIS).
Special stipulations are additional modifications to the lease based upon planning criteria that govern special resource considerations.

SUCCESSIONAL STAGES (forested types) . Phases of gradual supplanting of one community of plants by another, or progressive change in a timber stand toward maturity .

SUPPLEMENTAL VALUES. Special features of the WSA that give it a certain uniqueness (includes wallows, mineral licks, thermal springs, wet meadows, forests, parklands and wildlife.)

SUSTAINED YIELD TIMBER PRODUCTION BASE. The amount of timber in the Garnet Resource Area that is managed to achieve and maintain in perpetuity a high level annual or regular periodic output of timber. May also be shortened to Sustained Yield.

T&E. Threatened and endangered species of plants and animals.

TACK-ON. A parcel of public land that is less than 5,000 acres in size, possesses the wilderness characteristics of naturalness and outstanding opportunities for solitude or primitive recreation, and is adjacent to other federal land that has been designated as wilderness or is being studied for wilderness designation.

THERMAL COVER. Vegetation or topography that prevents radiational heat loss, reduces wind chill during cold weather, and intercepts solar radiation during warm weather. Generally, a minimum thermal stand consists of tree heights averaging 40 feet or greater and crown closure of 70 percent or greater.

THREATENED SPECIES. Those species of plant or animals classified by the Secretary of the Interior or the Secretary of Commerce as threatened, pursuant to Section 4 of the Endangered Species Act. Means any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

TIMBERED FORAGE. The herbaceous and woody vegetation available to ungulates in stands not usually meeting

thermal or security cover criteria. Most often the resultant forage from intermediate stand treatment.

WALLOW. A depression, pool of water, or wet area used by elk during the breeding season.

WINTER RANGE. Area occupied by animals during the winter months.

WSA. Wilderness Study Area. A parcel of public land that through the BLM's wilderness inventory process has been found to possess the basic wilderness characteristics of being at least 5,000 acres in size, being primarily natural, and having outstanding opportunities for solitude or primitive and unconfined types of recreation.

202 WSA. Same as a WSA except that it is less than 5,000 acres in size. It is studied under Section 202 of FLPMA.

REFERENCES

Cole, David N. and Randel F. Washburne. 1980. "Problems and Practices in Wilderness Management." Review draft of report. n.p.

Davis, George D. 1980. "The Case for Wilderness Diversity." *American Forests.* August 1980. p. 24.

Fenneman, Nevin. 1938. *Physiography of Western United States.* New York: McGraw-Hill.

Geo/Resource Consultants, Inc. 1983. *Geologic Survey of the Hoodoo and Philipsburg Planning Units, Granite and Powell Counties, Montana.* n.p.

Haug, P. T., R. W. Burwell, A. Stein, and B. L. Bandurski. 1984a. "Determining Significance of Environmental Issues Under NEPA." *Journal of Environmental Management.* Vol. 18. p. 15-24.

Haug, P. T., R. W. Burwell, G. Yeager, A. Stein, and B. L. Bandurski. 1984b. "A Systematic Interdisciplinary Language For Environmental Analysis Under NEPA." *Journal of Environmental Management.* Vol. 18. p. 1-13.

Kuchler, A. W. 1964. *Potential Natural Vegetation of the Conterminous United States.* American Geographical Society Special Publication No. 36.

Montana Department of Fish, Wildlife, and Parks. 1983. *Montana Statewide Comprehensive Outdoor Recreation Plan (SCORP).* Helena, MT.

Montana Department of Health and Environmental Services, Water Quality Bureau. 1979. *Statewide Water Quality Management Plan: Recommendations of the Statewide 208 Water Quality Management: Recommendations of the Statewide 208 Water Quality Management Planning Project.* Helena, MT.

Morrison-Maierle. Inc. 1978. *General Geologic Report, Blackfoot Planning Unit.* n.p.

Opinion Research Corporation, Inc. 1977. The public's participation in outdoor activities and attitudes toward national wilderness areas. Princeton, New Jersey.

Opinion Research Corporation, Inc. 1978. ORC public opinion index report to management 36 (17-18). Princeton, New Jersey.

Opinion Research Corporation, Inc. 1978a. Statewide survey in Montana on attitudes toward the use of natural resources on public lands. Princeton, New Jersey.

Opinion Research Corporation, Inc. 1978b. Statewide survey in Idaho on attitudes toward the use of natural resources on public lands. Princeton, New Jersey.

Opinion Research Corporation, Inc. 1978c. Statewide survey in Wyoming on attitudes toward the use of natural resources on public lands. Princeton, New Jersey.

Spencer, Edward, Herbert E. Eichelberger, Raymond E. Leonard, and Craig Evans. 1980. "Trends in Hiking and Backcountry Use." *In Proceedings: 1980 National OUtdoor Recreation Trends Symposium.* General Technical Report NE-57. Broomall, PA: USDA, Forest Service, Northeast Forest Experiment Station.

Stankey, George H. 1971. *The Perceptions of Wilderness Carrying Capacity.* East Lansing, MI. Michigan State University.

Thomas, Jack W. and D. E. Toweill. 1982. *Elk of North America, Ecology and Management.* Wildlife Management Institute Book. Stackpole Books. Harrisburg, PA.

USDA. Forest Service. 1976. Ecoregions of the United States. by Robert G. Bailey (Map). Ogden, UT.

USDA. Forest Service. 1978a. Descriptions of the Ecoregions of the United States. compiled by Robert G. Bailey.

USDA. Forest Service. 1978b. *Draft Environmental Statement Roadless Area Review and Evaluation.* Washington, D.C.

USDA. Forest Service. 1982. *Montana Cooperative Elk Logging Study.* Annual Program Report. A joint publication of the USDI, Bureau of Land Management; USDA, Forest Service; Montana Department of Fish, Wildlife, and Parks; and the School of Forestry, University of Montana.

USDI. Bureau of Land Management. 1976. *Environmental Analysis for Timber Management Plan.* Missoula Sustained Yield Unit. Missoula, MT.

USDI. Bureau of Land Management. 1978. *Wilderness Inventory Handbook: Policy, Direction, Procedures, and Guidance for Conducting Wilderness Inventory on the Public Lands.* Washington, D.C.

USDI. Bureau of Land Management. 1979. *Summary of Final EIS on the Crude Oil Transportation System*. Portland, OR.

USDI. Bureau of Land Management. 1980. *Water Quality Management of the Public Lands*. Billings, MT.

USDI. Bureau of Land Management. 1981a. *Oil and Gas Environmental Assessment of BLM Leasing Program*. Butte, MT.

USDI. Bureau of Land Management. 1981b. *Wilderness Management Policy*. Washington, D.C.

USDI. Bureau of Land Management. 1983a. *Interim Management Policy and Guidance for Lands Under Wilderness Review*. Washington, D.C.

USDI. Bureau of Land Management. 1983b. *State Director Guidance for Resource Management Planning in Montana and the Dakotas*. Billings, MT

USDI. Bureau of Land Management. 1984. *Land Pattern Review and Land Adjustment Supplement to the State Director Guidance for Resource Management Planning in Montana and the Dakotas*. Billings, MT.

USDI. Bureau of Land Management. 1985. *Garnet Resource Management Plan/Environmental Impact Statement*. Butte, MT.

USDI. Geological Survey. 1984. *Phase II, Geochemical Mineral Resource Survey of the Wales Creek Wilderness Study Area (075-150), Powell County, Montana*. Reinhard W. Leinz and David J. Grimes. Open File Report 84-343. Denver, CO.

U.S. President. Executive Order 11644. "Use of Off-road Vehicles on Public Lands." *Federal Register*. 37, No. 2877. February 9, 1977.

U.S. President. Executive Order 11989. "Off-road Vehicles on Public Lands." *Federal Register*. 42, No. 26959h. May 25, 1977.

Wallwork, S. S. 1984. The Montana Poll - Montanans and Selected Wilderness Issues. Montana Business Qrtly. 22(4) 15.

Western Utility Group. 1986. Western Regional Corridor Study. Prepared by Michael Clayton and Assoc., December 1986. 21 p.

WGM Incorporated. 1983. *Phase I, Geology, Energy, and Mineral (GEM) Resource Assessment of the Garnet RA, Montana, including the Wales Creek (975-150), Hoodoo Mountain (075-151A) and Gallagher Creek (075-151B) Wilderness Study Areas*. Greg Fernette. Bureau of Land Management Contract Number YA-553-CT2-1039. Anchorage, AK.

INDEX

R

S

T

U

W

☆U.S. GOVERNMENT PRINTING OFFICE: 1990-573-069/42001